United States
Department of
Agriculture

**Forest
Service**

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Environmental Assessment

Upper McKenzie Boat Launch Projects

McKenzie River Ranger District
Willamette National Forest

Legal Location:
T.16S, R.6E, Section 1; Frissell Boat Launch);
T.16S, R.6E, Section 9; (Paradise Boat Launch), and
T.16S, R.5E, Section 19; (Bruckart Boat Launch); Willamette Meridian;
Lane County, Oregon

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Figure 1. Vicinity Map

Upper McKenzie Boat Launch Project

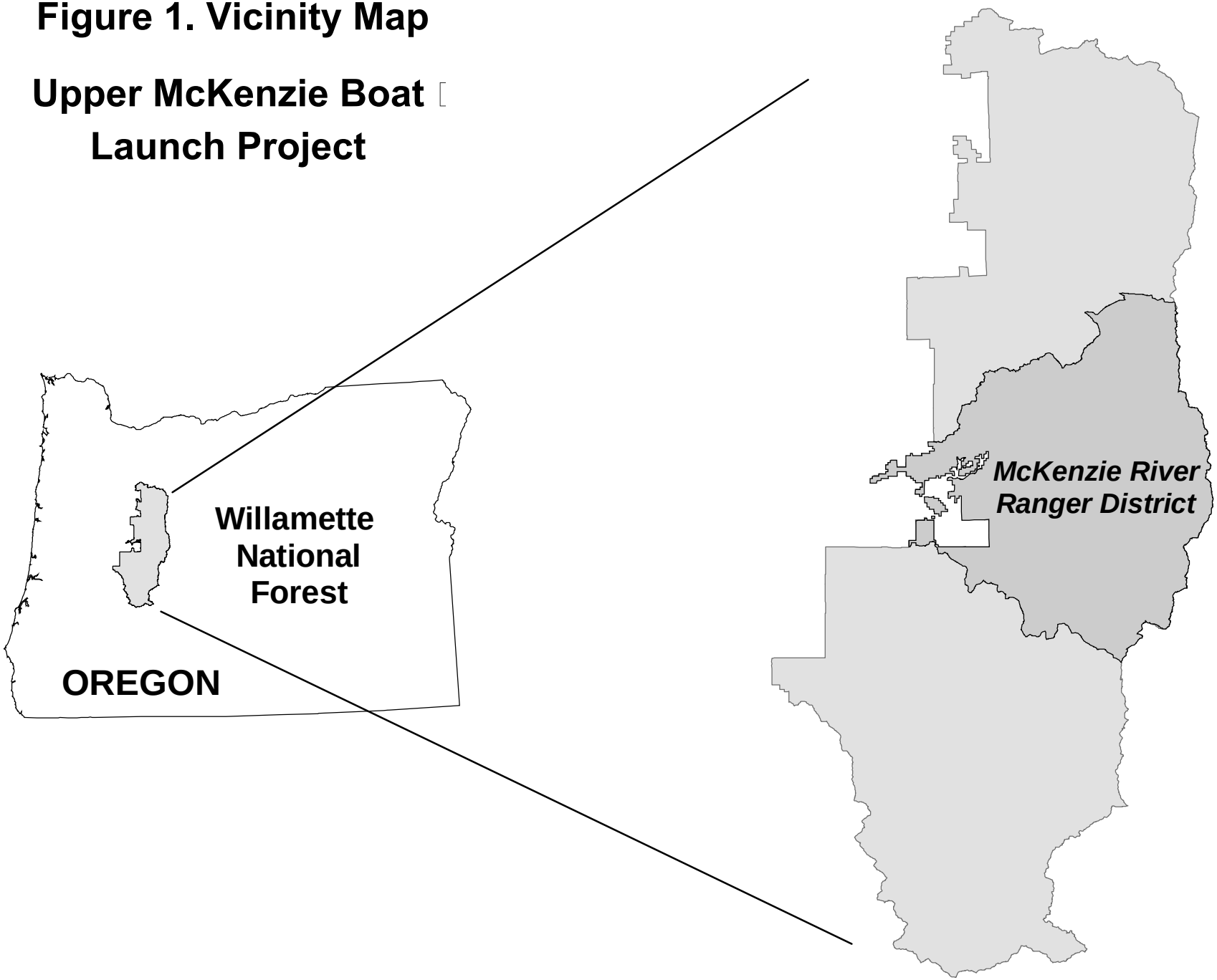
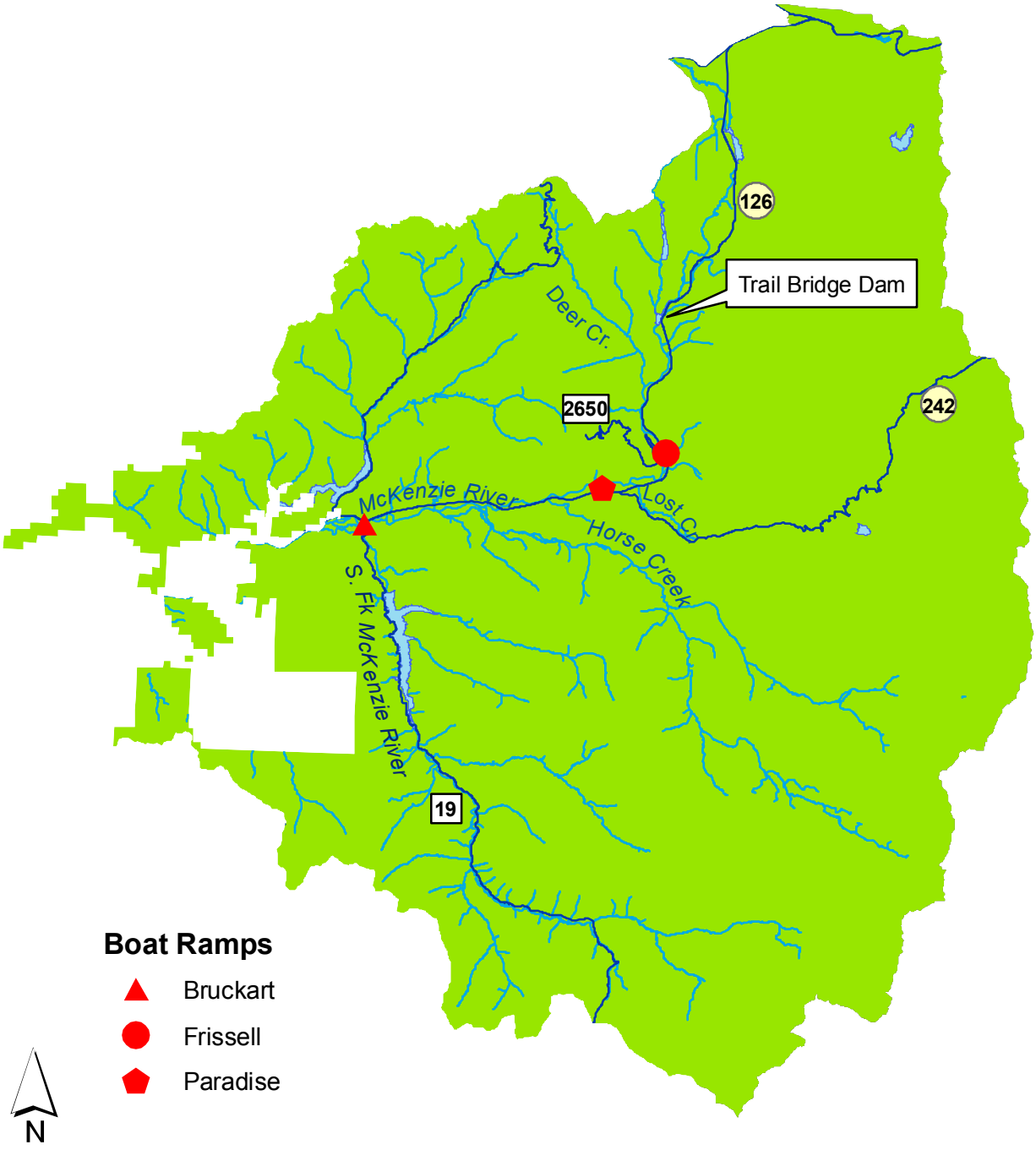


Figure 2. Vicinity Map

Upper McKenzie
Boat Launch Project
McKenzie River
Ranger District



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CHAPTER 1. PURPOSE AND NEED FOR ACTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and the two other alternatives. The document is organized into four parts:

- *Purpose and Need for Action:* The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes design measures and mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Affected Environment and Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- *Other Governments, Agencies, and Persons Consulted:* This section provides a list of agencies and other governments consulted during the development of the environmental assessment. It also includes mailing list for public scoping, and the list of document preparers.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including detailed analyses of project-area resources, may be found in the project planning record located at the McKenzie River Ranger District Office in McKenzie Bridge, Oregon.

Introduction

The McKenzie River is an important and valuable river to Oregon in terms of challenge to the skills of whitewater rafters, kayakers, and drift boat users. The upper McKenzie River, from Olallie Campground to Bruckart Bridge, is popular for Recreationists from the Willamette Valley and Central Oregon. Oregon state law prohibits any motorized boating on the upper McKenzie River. Frissell, Paradise and Bruckart boat launches on this section of river receive moderate to heavy seasonal use and are the subject of this analysis (see Figure 2).

Information collected during calendar year 2005 indicates that Paradise Boat Launch served 6,566 clients of commercial trips and 331 non-commercial clients; Frissell Boat Launch served 2,509 commercial clients and 190 non-commercial clients; while Bruckart Boat Launch served 3,861 commercial clients and 184 non-commercial clients. There were a total of 2,250 commercial crafts using these three launches and 302 non-commercial crafts. Information on commercial use is obtained through McKenzie River Ranger District records for the special use permits holders operating as outfitter/guides. Non-commercial use is determined by a voluntary boater registration card system.

Frissell Boat Launch, the most upstream of the three sites, is located within the upper McKenzie River National Wild and Scenic River and Oregon State Scenic Waterway corridors. It is on river left (looking downstream), and just upstream of the Frissell-Carpenter bridge (or Buck Bridge) and is adjacent to Oregon State Highway 126 – a National Scenic Byway in this location. The boat ramp is steep and comprised of loose gravels with buttress logs, and is oriented at a perpendicular angle to the river where boats launch into fast water.

Paradise Boat Launch, located in the Paradise Campground and which is a day use complex, lies within the Oregon State Scenic Waterway corridor, but not in the Upper McKenzie National Wild and Scenic River corridor. The boat launch is located on river left (looking downstream) and is comprised of compacted gravels with a paved approach. The launch is located at the downstream end of a cobble bar and is oriented at a perpendicular angle to the river where boats launch into slow water.

Bruckart Boat Launch is the furthest downstream of the three sites and is located approximately 500 feet upstream of Bruckart Bridge on Forest Road 19. The launch site is adjacent to Oregon State Highway 126, which is within a National Scenic Byway in this location. The boat ramp is on river right (looking downstream) and is considered steep. The ramp is comprised of deteriorating concrete pads and loose gravel, and it is oriented at a perpendicular angle to the river where boats launch into fast water.

This project was initiated because of deteriorating conditions at these three ramps. Other concerns included the steepness of the angle with which boats launch into the river, and the need to improve access to each of the boat launches. In addition, uncertainties about the long term navigability of the McKenzie River through a perennial log jam located downstream of Bruckart Bridge is also an important factor in assessing the suitability of the Bruckart Boat Launch.

In 2003, funds were provided through the Secure Rural Schools Community Self-Determination Act of 2000, to conduct an assessment of Frissell, Paradise, and Bruckart boat launches and to determine the effects of reconstructing or relocating these sites.

Legal description of the project: T.16S., R.6E., Sec. 1, (Frissell Boat Launch); T.16S., R.6E., Sec. 9, (Paradise Boat Launch); and T.16S., R.6E., Sec. 18, (Bruckart Boat Launch); Willamette Meridian; Lane County, Oregon.

Purpose and Need for Action

The purpose and need for action for this initiative is to meet direction in the amended 1990 Willamette National Forest Land and Resource Management Plan (USDA Forest Service, 1990), to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River. The Willamette Forest Plan recognizes the need to provide access to the river in the form of boat launch facilities for whitewater rafting, kayaking, and drift boating in. (See *Relationship to the Willamette Forest Plan* in this chapter.)

Frissell, Paradise and Bruckart launch facilities do not currently provide the level of developed recreation opportunities that is commensurate with projected need (Forest-wide Standards and Guideline, FW-006). Peak season boat launch use at these developed sites often results in over-crowded ramp areas, inadequate access roads and approaches to the ramps, and lack of vehicle parking. Large groups, primarily associated by permitted river outfitter-guides under Forest Service special-use permits, place a heavy demand on these launch sites in the summer.

The boat ramps are in need of repair or relocation to meet projected needs. Since the boat ramps are constructed with mostly compacted gravel and have slopes into the river in excess of 15%, unstable conditions exist for both pedestrians and vehicles attempting to launch inflatable rafts and drift boats. Each year, fluctuations in river levels and flow removes gravel at all three ramps, and specific to Bruckart ramp, also erodes the gravel around concrete and asphalt ramp additions. The ramps typically require annual maintenance to replace gravel, particularly at Frissell and Bruckart, which are more exposed to the main current of the McKenzie River.

Frissell Boat Launch has been identified for relocation and improvement in the Upper McKenzie River Management Plan (USDA Forest Service, 1992). This plan, which amended the Willamette Forest Plan in 1992, includes a set of actions designed to resolve issues and help attain the desired future condition for the upper McKenzie River. The Plan identifies the need to develop a Capital Investment Program proposal for Buck Bridge dispersed recreation area (including Frissell launch), which would include re-establishment of restroom facilities, consideration of building a new boat launch on the west side of the McKenzie River, and closing the boat launch on the east side (on Oregon State Highway 126).

Proposed Action

In response to the need for action, the District Ranger of the McKenzie River Ranger District proposes to relocate boat launches at Frissell and Bruckart launch sites, and reconstruct the existing boat launch at Paradise. This proposed action is represented as Alternative 2 in this assessment, and it satisfies the need to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River, as directed by the amended Willamette Forest Plan.

Actions Specific to Frissell Boat Launch

- Relocate by constructing a new launch site on river-right, across the McKenzie River from the existing site and downstream from the Frissell-Carpenter Bridge (see Appendix F, Figure 3). A new pre-fabricated concrete ramp would be installed measuring approximately 16 feet wide by 40 feet long (640 square feet). The ramp would extend into the river approximately 10 to 15 feet. Approximately 12 to 20 red alder trees would be felled. These red alders would be spread in the floodplain to serve as down woody material where it is feasible to do so without creating greater disturbance.
- Construct a new paved access road with a loop at the ramp, a staging area along the road, and a concrete pad to seasonally locate portable toilets on (see Appendix F, Figure 4). The new road would require felling and removal of approximately 52 conifer trees and 4 hardwoods, which would be decked and used for in-stream fish habitat or spread in the riparian reserve to serve as down woody material where it is feasible to do so without creating greater disturbance.
- Improve two pull outs along Forest Road 2650 to provide parking for vehicles and trailers. Improvements would include blading the existing shoulders to ensure proper drainage and safety, conducting some brushing, and adding aggregate.
- Decommission the existing boat launch on river-left and restore the river bank and a portion of the terrace. The existing buttress logs and cable would be removed from the site. A portion of the existing pull-out access would remain for motor vehicles along State Highway 126 (see Appendix F, Figure 5). The existing boat launch and pullout area are along the Santiam Pass-McKenzie Pass National Scenic Byway. The decommissioned boat ramp location and a portion of the highway pullout would be restored by shaping a berm to divert or contain runnoff and seeding with native grasses. The large pull out would be rehabilitated by importing topsoil and re-shaping the surface.

Actions Specific to Paradise Boat Launch

- Install a new pre-fabricated concrete ramp at the existing ramp site that is wide enough to serve as two ramps (see Appendix F, Figures 6 and 7). The ramps would measure approximately 40 feet by 32 feet (1,280 square feet) and would extend into the river approximately 10 to 15 feet. Connect the existing approach road to the concrete ramp with new asphalt apron (approximately 710 square feet of new pavement). Relocate approximately 20 small boulders (16 inches to 24 inches in diameter) that would block use of the extended ramp width during low flow months.

- Pave an additional 130 feet of road-side parking in the day-use area near the ramp. The proposed location is currently unpaved native surface, and used by the public for parking.
- Designate an additional staging area adjacent to the launch area at a historic camp site established by the CCC with signing.
- Improve an existing user trail within the bank-full width of the river, adjacent to and downstream from the boat ramp. The trail is used to facilitate unloading large groups during "take out" activities. Actions include moving one 20" log and minor brush cutting.

Actions Specific to Bruckart Boat Launch

- Relocate by constructing a new launch site on the same side of the river (river-right) downstream from Bruckart Bridge (see Appendix F, Figure 8). A new pre-fabricated concrete ramp would be installed measuring approximately 16 feet wide by 40 feet in length (640 square feet). The ramp would extend into the river approximately 10 to 15 feet. Approximately 12 to 20 red alder trees would be felled. The cut alders would be spread in the floodplain to serve as down woody material where it is feasible to do so without creating greater disturbance.
- Construct a new paved access road with a loop at the ramp, including turnouts, parking stalls, a staging area, and concrete toilet pad to seasonally locate portable toilets on at the new site (see Appendix F, Figure 9). The construction of an access and loop road, staging area, and toilet pad would require the felling of approximately 47 conifers and numerous vine maple. Those trees that are suitable for fish habitat enhancement projects would be staged in a location separate from the new launch location and used in future projects. Those trees that were not suitable would be spread out in the terrace area to serve as down woody material where it is feasible to do so without creating greater disturbance. All stumps would be flush cut.
- Provide additional parking along Forest Road 19 by widening the shoulders. Fill material would be required to widen the shoulders prior to paving. One parking area would be 90 feet long by 10 feet wide (900 square feet), and the other would be 150 long by 10 feet wide (1,500 square feet) on the opposite side of Road 19 (2,400 square feet in total).
- Decommission the existing boat launch site and an existing native surfaced road that connects Bruckart landing to Forest Road 19 (see Appendix F, Figure 10). Decommissioning would include scarifying 2 to 4 inches deep and seeding with native grasses.

Decision Framework

The Responsible Official for this proposal is the McKenzie River District Ranger. While considering the purpose and need to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River, as directed by the amended Willamette Forest Plan, the responsible official shall review the proposed action and the other alternative actions, and may decide to:

- select the proposed action, or
- select another action alternative that has been considered in detail, or
- modify an action alternative, or
- select the no-action alternative.

The Responsible Official would also determine if the selected alternative is consistent with the Willamette Forest Plan or if the Forest Plan should be amended in this action.

Relationship to the Forest Plan

In April 1994, the Willamette National Forest Land and Resource Management Plan, (USDA Forest Service, 1990) was amended by the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Spotted Owl, April 1994 (USDA Forest Service and USDI Bureau of Land Management. 1994). The Northwest Forest Plan modified the Willamette Forest Plan by overlaying management areas and their accompanying standards and guidelines.

In order to eliminate repetition and focus on site-specific analysis, this EA is tiered to the following documents as permitted by 40 CFR 1502.20:

- The Willamette National Forest Land and Resource Management Plan (Forest Plan) FEIS and Record of Decision (ROD) dated July 31, 1990, and all subsequent NEPA analysis for amendments, including the April 1994, Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Spotted Owl, or Northwest Forest Plan (USDA Forest Service and USDI Bureau of Land Management. 1994), and the accompanying Land and Resource Management Plan, as amended. The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Willamette National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.
- This EA also tiers to a recent broader scale analysis for invasive plants (the Pacific Northwest Region Final Environmental Impact Statement for the Invasive Plant Program, 2005, hereby referred to as the R6 2005 FEIS) (USDA Forest Service. 2005). The R6 2005 FEIS culminated in a Record of Decision (R6 2005 ROD) that amended the Willamette National Forest Plan by adding management direction relative to invasive plants. This project is intended to comply with the new management direction. Proposed actions would also incorporate measures contained in the December 1988, Record of Decision and FEIS for Managing Competing and Unwanted Vegetation, and the requirements of the Mediated Agreement, signed May 24, 1989 by USFS, NCAP, OFS, et al.

The Willamette Forest Plan includes the following resource management goals, which are the basis for Forest management. The following are pertain to recreation:

- Meeting the goals and objectives of the National Recreation Strategy.
- Maintaining and protecting existing and potential recreation sites, consistent with public demand, through operation, maintenance, and rehabilitation activities.
- Providing for distribution of a broad spectrum of developed recreation opportunities and experiences consistent with Forest use patterns and public demand.
- Providing for the protection, management and, where practicable, enhancement of the "outstandingly remarkable values" of designated Wild and Scenic Rivers.

Watershed Analysis

Two watershed analyses have been conducted in the project areas to meet direction in the 1994 Northwest Forest Plan. These analyses develop and document a scientifically-based understanding of the processes and interactions occurring within the Upper McKenzie Watershed and Quartz Creek and Minor Tributaries Watershed (see Appendix F, Figure 11).

Frissell and Paradise Boat Launches are in the Upper McKenzie Watershed. The Upper McKenzie Watershed Analysis was completed in August 1995. Bruckart Boat Launch lies within the Quartz Creek and Minor Tributaries watershed. The Quartz Creek and Minor Tributaries Watershed Analysis was completed in April 1998.

Key Watersheds

Key Watersheds are not a designated management area, but overlay all management areas. All 24.455 million acres of Forest Service, BLM, and other federally-administered lands within the range of the northern spotted owl are also allocated into one of three watershed categories: Tier 1 Key Watersheds, Tier 2 Key Watersheds, or non-Key Watersheds (all others). Key Watersheds overlay portions of all six categories of designated areas and matrix found in the Northwest Forest Plan Record of Decision. In Key Watershed areas additional management requirements are placed on activities.

Key Watersheds contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program.

Frissell Boat Launch lies within the Upper McKenzie River Tier 1 Key Watershed. Both Paradise and Bruckart launches are within non-Key Watersheds. The new road construction proposed for Frissell Boat Launch would add approximately 0.1 mile of new road construction in this Key Watershed. Since 1994, other projects have cumulatively decommissioned approximately 11.14 miles of road in the Upper McKenzie Watershed, a majority of which was done with the Robinson-Scott Landscape Management Project. The total mileage of already decommissioned roads is enough to offset 0.1 mile of new road

construction at Frissell Boat Launch to meet the "No Net Increase" in roads in this Key Watershed as directed by the 1994 Northwest Forest Plan ROD (B-19).

Management Areas

Management Areas (MAs) are units of land with boundaries that can be located on the ground, each having specific direction for management as detailed in the Forest Plan. Management Area direction consists of an emphasis statement, goals, desired future condition, and a description of Standards and Guidelines. In addition, the Forest Plan contains Forest-wide standards and guidelines that apply to all management areas unless specifically exempted by Management Area direction.

The table below displays Willamette Forest Plan Management Areas and Northwest Forest Plan Land Allocations that are within the boat launch project action areas. Action areas are those sites where proposed activities could take place, or sites designated for fueling or fuel storage. The following table displays Management Area designations in the 1990 Willamette Forest Plan, and the overlying designations from the 1994 Northwest Forest Plan.

Table 1. Management Areas within the McKenzie River Boat Launch Project

Willamette Forest Plan Management Areas	Northwest Forest Plan Management Areas	Boat Launches
MA-5a – McKenzie River Special Interest Area (SIA)	Administratively Withdrawn	Bruckart, Paradise
MA-6d – McKenzie River Wild & Scenic River (Recreation Classification)	Congressionally Reserved	Frissell
MA-11a – Scenic (Modification Middleground)	Matrix	Bruckart
MA-11f – Scenic (Retention Foreground)	Matrix	Paradise
MA-14a – General Forest	Matrix	Frissell
MA-15 – Riparian Area	Riparian Reserve	Bruckart, Frissell, Paradise
MA-17 – Adaptive Management Area	Adaptive Management Area	Bruckart, Frissell, Paradise

MA-5a, McKenzie River Special Interest Area (SIA)

The goals of this Management Area are to preserve lands in Special Interest Areas that contain exceptional scenic, cultural, biological, geological or other unusual characteristics; and to foster public use and enjoyment in selected SIAs through facility development.

Special Interest Area development activities could include roads, trails, trailheads, sanitation facilities, interpretive signing, or others as appropriate. Bruckart Boat Launch is within MA-5a.

MA-6d, Designated Wild and Scenic River – Upper McKenzie River

The McKenzie River is designated as a Wild and Scenic River (WSR) with a "Recreation" River Class, because it possesses numerous outstandingly remarkable values (ORV) such as: prominent recreational

opportunities, spectacular scenery, unique geological and hydrologic attributes, outstanding water quality, and diverse fish populations and habitat. In 1992, the Upper McKenzie River Management Plan and accompanying Environmental Assessment was completed to comply with law established by the 1968 National Wild and Scenic Rivers Act. This comprehensive River Management Plan tiered to the 1990 Willamette Forest Plan.

In 1988, the upper McKenzie River was designated as Wild and Scenic from Clear Lake to Scott Creek, a 12.7 mile stretch. The upper terminus is established where the McKenzie River flows out of Clear Lake. The lower terminus is at the confluence of Scott Creek and the McKenzie River. The McKenzie River is divided into three WSR segments (A, B, and C) omitting the existing hydroelectric developments: Segment A is a 1.8 mile segment from Clear Lake to the head of maximum pool at Carmen Reservoir. Segment B is a 4.3 mile segment from a point 100 feet downstream from Carmen Dam to the maximum pool at Trail Bridge Reservoir. Segment C is a 6.6 mile segment from the developments at the base of the Trail Bridge Reservoir Dam to Scott Creek.

The legislation required the USDA Forest Service to develop a management plan for this designated river in three years. In 1992, the Willamette National Forest released the Upper McKenzie River Management Plan Environmental Assessment and Management Plan and Decision Notice (USDA Forest Service. 1992) to meet Federal and State laws and provide a guide to management of both the Federal and State designated portions of the McKenzie River. Federal management goals for this project can be found in the Upper McKenzie River Management Plan (1992). This project works toward meeting those goals by providing opportunities for a wide range of river-oriented recreation activities, and by striving for a balance of resource use and protection and permitting other activities to the extent that they protect and enhance the river's outstandingly remarkable values and special attributes.

The plan also included distinct actions designed to resolve the major issues identified and to help attain the desired future condition for the upper McKenzie River. One of the actions was the development of a Capital Investment Program proposal for Buck Bridge (Frissell) dispersed recreation area. As discussed in the Purpose and Need for action, proposals that were foreseen in that analysis include re-establishment of restroom facilities, consideration of building a new boat launch on the west side of the McKenzie River, and closing the boat launch on the east side (on Oregon State Highway 126).

Actions within this management area must protect the river's free flowing character and maintain and enhance its outstandingly remarkable values and special attributes.

The Frissell Boat Launch is located within Segment C of the Upper McKenzie Wild and Scenic River.

Oregon State Scenic Waterway

Segments of the McKenzie River within this project area are also within portions of the Oregon State Scenic Waterway, administered by the Oregon State Parks and Recreation Commission. The Scenic Waterway Act and Commission rules require the evaluation of proposed development within ¼ mile from

each side of the river. Concurrence of project effects with Oregon State Parks and Recreation Division is necessary through Section 7 Wild and Scenic River analysis. An analysis of potential project effects to the outstandingly remarkable values of the Wild and Scenic River (Section 7 Wild and Scenic River analysis) has been prepared for this project proposal.

The termini and boundaries of the State Scenic Waterway designation are different from the Federal Wild and Scenic McKenzie designation. Approximately 16 miles of the upper McKenzie are designated as State Scenic Waterway. The boundaries are ¼ mile on both sides of the river. The upper terminus is established where the McKenzie River flows out of Clear Lake. The State Scenic Waterway omits the stretch from Carmen Reservoir to Tamolitch Falls, and also omits the hydroelectric developments. The lower terminus is Paradise Campground. The State Scenic Waterway has three unnumbered segments. The first is 1.8 miles from Clear Lake downstream to Carmen Reservoir. The second is approximately 2 miles long from Tamolitch Falls to Trail Bridge Reservoir. Finally, the third segment is approximately 12 miles long from Trail Bridge Dam downstream to Paradise Campground. The segments have a dual classification. The west side of the McKenzie River is classified as Scenic River Area, and the east side of the river is classified as Recreation River Area.

Goals of the State Scenic Waterway Program for this project can be found in the Upper McKenzie River Management Plan (1992). The following are those that are directly applicable to this project:

- To protect the free flowing character of designated rivers for fish, wildlife, and recreation.
- To protect and enhance the scenic, aesthetic, natural, recreation, scientific, and fish and wildlife values along scenic waterways. New development or changes of existing uses proposed within a scenic waterway are reviewed before they may take place.

Frissell and Paradise Boat Launches both lie within the Oregon State Scenic Waterway. In the proposed action, Frissell is relocated to the west side of the river (Scenic River classification). In Alternative 3, Frissell remains on the east side of the river (Recreation River classification). Paradise Boat Launch remains in its current location in both action alternatives (Recreation River classification). Bruckart Boat Launch is not located within either the federal Upper McKenzie Wild and Scenic River corridor or the Oregon State Scenic Waterway.

MA-11a Scenic (Modification Middleground)

The goal of this management area is to create and maintain desired visual characteristics of the forest landscape through time and space. Visually sensitive landscapes will be managed for a modest level of scenic quality. This area will also be managed for other resource goals including timber production, recreation opportunities, watershed protection, and maintenance of wildlife habitat.

MA-11f Scenic (Retention Foreground)

The goal of this management area is to create and maintain desired visual characteristics of the forest landscape through time and space. Visually sensitive landscapes will be managed for a high level of scenic quality. This area will also be managed for other resource goals including maintenance of wildlife habitat, recreation opportunities, watershed protection, and timber production.

MA-14 General Forest / Matrix

The primary goal of this management area is to produce an optimum and sustainable yield of timber based on the growth potential of the land that is compatible with multiple use objectives and meets environmental requirements for soil, water, air and wildlife habitat quality. In addition this area can provide many opportunities for public use and enjoyment.

MA-15 Riparian Area / Riparian Reserves

The primary goal in this management area is to maintain the role and function of rivers, streams, wetlands, and lakes in the landscape ecology. Riparian Reserves are one of the six designated management areas identified in the Northwest Forest Plan.

Riparian Reserves usually include at least the water body, inner gorges, all riparian vegetation, 100-year floodplain, landslides, and landslide-prone areas. Reserve widths are based on some multiple of a site-potential tree, or a prescribed slope distance, whichever is greater. Reserve widths may be adjusted based on watershed analysis to meet Aquatic Conservation Strategy (ACS) objectives from the Northwest Forest Plan. The ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands by maintaining and restoring ecosystem health at watershed and landscape scales. The intent is to protect habitat for fish and other riparian-dependent species and to restore currently degraded habitats.

Frissell, Paradise, and Bruckart boat launches are within riparian reserves. The proposed relocation areas in the proposed action also include riparian reserves.

MA-17 Central Cascades Adaptive Management Area

Adaptive Management Areas (AMAs) are landscape units designated to encourage the development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives. The overall objective for AMAs is to learn how to manage on an ecosystem basis in terms of both technical and social challenges, and in a manner consistent with applicable laws.

The specific emphasis for the Central Cascades AMA are intensive research on forest management in experiments and demonstrations at the stand and watershed level; approaches for integrating forest and stream management objectives and on implications of natural disturbance regimes; and management of young and mature stands to accelerate development of late-successional conditions. Bruckart Boat launch is within the Central Cascades AMA.

Issue Development

Scoping and Public Involvement

Scoping is the process for determining issues relating to a proposed action and includes review of written comments, distribution of information about the project, interdisciplinary Team (IDT) meetings, and local news releases.

The Project was initiated in January 2003 and was listed in the spring 2003 issue of the Willamette Forest Focus--the quarterly schedule of proposed actions (SOPA) for the Willamette National Forest. Information on the project appeared in the local McKenzie River newspaper, The River Reflections, on February 12, 2003. The information appeared in the Register-Guard Discovery Magazine (May 22, 2003) requesting public input. Scoping letters were sent to interested parties including the Tribal Governments on February, 10, 2003 and May 29, 2003. A field trip was held for the public on Saturday, September 20, 2003 to review proposals and visit the launch locations. Several comments were received from letters during scoping and as a result of the field trip. These comments contributed to the design of the proposed action and to Alternative 3. Interdisciplinary Team responses to comments are found in Appendix G.

Significant Issues

Forest Service regulations (1950, chapter 11(3)) require that issues that are not significant to the project or that have been covered by prior environmental review be identified and eliminated from detailed study. Discussion of these issues should be limited to a brief statement of why they will not have a significant effect on the human environment or a reference to their coverage elsewhere. The issues will be listed as "Significant Issues," and "Other Issues".

The public and IDT identified many issues. The responsible official considered these pertinent issues and determined which are significant to the project. The following Significant Issues drove the development of an alternative to the proposed action. The Significant Issues are tracked through issue identification (in this chapter), alternative description in Chapter 2, and environmental consequences in Chapter 3.

Recreation Capacity

Issue: The design of the launch facilities may affect the number of people and number of crafts that can be accommodated at each site at one time, and the amount of crowding that occurs at each facility.

Unit of Measure: Qualitative. The effects are based on the degree to which the alternatives affect the number of people and number of crafts that can be accommodated at the site at one time. Factors considered when assessing each of the alternatives included degree of crowding at each facility, amount of vehicle parking area available at each launch site, amount of staging area space available at each launch

site, and numbers of people and craft accommodated.

Safety and Access

Issue: High velocity river flows at Frissell and Bruckart sites make it hazardous to launch or land at these facilities.

Unit of Measure: Qualitative description of river velocity in the immediate area of the launch and proposed locations. A qualitative estimate is needed due to safety considerations. Velocities will be described qualitatively in the immediate vicinity of existing ramps and proposed relocation sites.

Issue: The steep condition of the ramps at Frissell and Bruckart make it hazardous for people to access the boats.

Unit of Measure: grade of ramp, location of ramp, and surface type of ramp existing ramps in relation to proposed designs.

Threatened, Endangered, Sensitive (TES) Fish, and Management Indicator Species (MIS) Fish

Issue: The location of boat ramps could affect some life history stages of TES and MIS fish, and migratory, spawning, or rearing habitat.

Unit of Measure: Qualitative. Describe the quality of migratory, spawning, and rearing habitat of TES listed fish species (spring Chinook salmon and bull trout) and fisheries MIS (rainbow and Coastal cutthroat trout) in current locations and proposed relocation sites, and qualitatively describe the effects of project implementation.

Other Issues: _____

These *other issues* were addressed in project development. The issue statements below are followed by reasons why they were not considered significant to the development of alternatives and not fully analyzed. However, they may serve as important tools that are used to qualitatively evaluate differences between alternatives.

Vehicle Capacity and Design

The design of the boat launches and the staging areas may affect the types of watercraft that can be accommodated at each site at the number of launches that may occur at one time. This issue was not considered significant for the development of alternatives because the proposed action and the other action alternative are designed to accommodate the types of craft currently using the facilities.

In addition, the Oregon Department of Transportation (ODOT) provided input to the project during a field trip to Frissell and Bruckart launch sites on January 8, 2003. ODOT's design features are based on Oregon law and their input to re-designed turnout at Frissell Boat Launch is incorporated into Alternative 3.

Water Quality

The project could affect stream banks and beds, river dynamics, riparian and upland vegetation during boat launch site reconstruction, relocation, and rehabilitation activities. Stream temperatures could potentially be affected by the removal of riparian vegetation.

This issue was not considered significant to the formation of alternative because the effects on water quality from through disturbance would be short term and mitigation measures would limit effects on riparian resources (see Chapter 2, Mitigation Measures and Project Design Measures).

Heritage Resources

The proposed boat launch reconstruction, relocation, and rehabilitation activities could potentially affect heritage resources in the immediate vicinity.

Surveys of the proposed project area have been completed. No historic properties were identified. The Zone Archaeologist would evaluate any properties discovered during the course of project implementation for significance.

Noxious Weeds

The project poses a concern for the introduction of noxious weeds due to the ground disturbing nature of the activities.

Mitigation measures will be used to mitigate the potential introduction of noxious weeds (see Chapter 2, Mitigation and Project Design Measures.)

Threatened, Endangered, Sensitive, or Other Wildlife Species of Concern

The proposed action may have the potential to disturb TES wildlife species either directly affecting habitat or from disturbance during implementation.

This issue was not considered significant because any potential impacts to known TES wildlife species in the area can be avoided through mitigation such as survey and monitoring, and requiring seasonal restrictions during implementation (see Chapter 3, TES Wildlife).

Wildlife Management Indicator Species (MIS)

The proposed action may have the potential to disturb wildlife MIS species either directly affecting habitat or from disturbance during implementation.

This issue was not considered significant because any potential impacts to MIS wildlife species in the area can be avoided through survey and monitoring and mitigation requiring seasonal restrictions during implementation. (see Chapter 3, TES Wildlife).

Wild and Scenic River and State Scenic Waterway

The proposed action could affect the outstandingly remarkable values and attributes within designated river segments. This issue was not considered significant because a Section 7, Wild and Scenic Rivers Act analysis has been completed, and it determined that the proposed actions would not diminish the outstanding remarkable values and attributes for which the upper McKenzie River segment was designated (see Appendix E).

West Cascades and Santiam Pass – McKenzie Pass National Scenic Byways

Both Frissell Boat launch and Bruckart Boat Launch are currently situated along the West Cascades National Scenic Byway. Frissell Boat Launch is also along the Santiam Pass – McKenzie Pass National Scenic Byway, which coincides with the West Cascades Scenic Byway on this segment. In 1997, the West Cascades Scenic Byway Corridor Management Plan was completed (USDA Forest Service. 1997).

One of the goals and objectives of the management plan is to coordinate management of public use sites to further protect and enhance natural and cultural resources, and to provide continuity of design. The proposed action would relocate both Frissell Boat Launch sites to the opposite side of the river from State Highway 126 but within view of the highway. Bruckart Boat Launch would be relocated away from State Highway 126, but within view from Forest road 19, also along the West Cascades National Scenic Byway. The design of these new boat ramps has been done to retain native vegetation and to be consistent with Willamette Forest Plan standards and guidelines for development of recreation sites.

Relocating the launch facilities includes actions to restore the existing boat ramps and parking areas. Design features have been incorporated enhancement measures protect scenic quality along the frontage view of the Scenic Byway. (See Chapter 2 and 3 for details.)

Chapter 2. ALTERNATIVES, Including the Proposed Action

This chapter describes and compares the alternatives considered for the McKenzie River Boat Launch Project. This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. This analysis considers the reconstruction of the boat launches, the relocation of the boat launches, and the no action alternative (no change from existing design or maintenance regime).

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14).

Comments were received during scoping that favored improvements to an existing boat launch at MP 52 of State Highway 126, which is the developed trailhead for the McKenzie River National Recreation Trail. The ID Team considered these comments and the suggestions to modifications this site. An alternative to carry forward improvements at the trailhead was eliminated from this analysis when the team reviewed the November 1999 Decision Memo that implemented the development of this site in 2002. The Decision Memo states that the primary uses will be as a trailhead for the National Recreation Trail, and as an interpretive site for the West Cascades National Scenic Byway.

Alternatives

Alternative 1, (No Action) – The Current Management Situation

Alternative 1 does not meet the purpose and need to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River, as directed by the amended Willamette Forest Plan. The no-action alternative would not take actions to improve the conditions of boat launches or move them from their current location. This alternative does not improve existing parking or staging areas.

Ongoing annual maintenance of the boat ramps would continue because ramps structures at all boat launches would continue to require annual maintenance to replace gravels, particularly at Frissell and Bruckart where they are more exposed to the main current of the McKenzie River.

Alternative 2 - The Proposed Action

The Proposed Action would relocate the Frissell and Bruckart boat launches, and reconstruct the Paradise Boat Launch. Alternative 2 would meet the need to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River, as directed by the amended Willamette Forest Plan.

Actions Specific to Frissell Boat Launch:

- Relocate to a launch site on river-right, across the McKenzie River from the existing site and downstream from the Frissell-Carpenter Bridge (see Appendix F, Figure 3). A new pre-fabricated concrete ramp would be installed measuring approximately 16 feet wide by 40 feet long (640 square feet). The ramp would extend into the river approximately 10 to 15 feet from bank-full width. Up to 240 square feet of concrete pad would be in the river channel (Appendix F, Figure 4). Approximately 12 to 20 red alder trees would be removed from the floodplain where the new ramp would be placed. The cut alders would be spread in the floodplain to serve as down woody material where it is feasible to do so without creating greater disturbance.
- Construct a new paved access road with a loop at the ramp. The road would have a staging area and include a concrete pad to seasonally locate portable toilets on (see Appendix F, Figure 4). Approximately 30 Douglas-fir would be cut, 18 Western red cedar, 4 Western hemlock, 4 big leaf maple, and Pacific yew trees on the terrace would need to be felled to construct the access and loop road, staging area, and toilet pad. Those trees that are suitable for fish habitat enhancement projects would be staged in a location separate from the new launch location and used in future projects. Those trees that were not suitable would be spread out in the terrace area to serve as down woody material where it is feasible to do so without creating greater disturbance. All stumps would be flush cut. The approximate area of disturbance for the loop road, staging area, and concrete pad for the portable toilet would be 10,936 square feet.
- Improve two pull outs along Forest Road 2650 to provide parking for vehicles and trailers. Improvements would include blading the existing shoulders to ensure proper drainage and for safety, brushing, and adding aggregate surfacing.
- Decommission the existing boat launch on river-left and restore the river bank and a portion of the terrace. The existing buttress logs and cable would be removed from the site. A portion of the existing pull-out access would remain for motor vehicles along State Highway 126 (see Appendix F, Figure 5). The boat ramp location and a portion of the highway pullout would be seeded with native grasses, shrubs and conifers.
  The large pullout is along the West Cascades National Scenic Byway, and would be rehabilitated by importing topsoil and shaping it into hummocks to serve as a barrier between the highway and the river by acting as a soil filter and as a berm that diverts water into existing vegetation. The hummocks would be re-vegetated along with the old ramp site to keep vehicles from driving onto the area.

Actions Specific to Paradise Boat Launch:

- Install a new pre-fabricated concrete ramp at the existing ramp site that is wide enough to serve as two ramps (see Appendix F, Figure 7). The ramps would measure approximately 40 feet by 32 feet

(1,280 square feet) and would extend into the river approximately 10 to 15 feet. Connect the existing approach road to the concrete ramp with new asphalt apron (approximately 710 square feet of new pavement).

- Relocate approximately 20 existing small boulders within the river (16 inches to 24 inches in diameter) that would block use of the extended ramp width during low flow months. An excavator would be used to place these small boulders further into the channel where the river can mobilize and relocate them.
- Pave an additional 130 feet of road-side parking in the day-use area near the ramp. The proposed location is unpaved and currently used by the public for parking on a native surface.
- Designate an additional staging area adjacent to the launch area with signing. The site is an existing historic camp site established by the CCC.
- Improve an existing user trail within the bank-full width of the river, adjacent to and downstream from the boat ramp. The trail is used to facilitate unloading large groups during "take out" activities. Actions include moving one 20" log and minor brush cutting.

Actions Specific to Bruckart Boat Launch:

- Relocate the ramp to a new site downstream from Bruckart Bridge on the same side of the river (river right) (See Appendix F, Figure 8). The ramp would be made of prefabricated concrete and would be 16 feet wide by 40 feet in length (640 square feet) and would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel) (See Appendix F, Figure 9). Approximately 12 to 20 red alder trees would be removed from the floodplain where the new ramp would be placed. The cut alders would be spread in the floodplain to serve as down woody material where it is feasible to do so without creating greater disturbance.
- Construct and pave an access road, loop road, turnout, parking stalls, staging area, and concrete toilet pad at the new site. The design of the loop road minimizes the number of large trees that would be felled and moved. Approximately 33 Douglas-fir, 1 Western red cedar, 12 Western hemlock, and 1 Pacific yew on the terrace would be felled to construct the access and loop road, staging area, and portable toilet pad. Those trees that are suitable for fish habitat enhancement projects would be staged in a location separate from the new launch location and used in future projects. Those trees that were not suitable would be spread out in the terrace area to serve as down woody material where it is feasible to do so without creating greater disturbance. All stumps would be flush cut. The total approximate area of disturbance for these actions is 19,840 square feet.
- Provide additional parking along Forest Road 19. Fill material would be brought in to widen the shoulders prior to paving. One parking area on the opposite side of Road 19 would be 90 feet long

by 10 feet wide (900 square feet), and the other would be 150 long by 10 feet wide (1,500 square feet). Total area of parking expansion would be approximately 2,400 square feet.

- Decommission the existing boat launch site (see Appendix F, Figure 10), by grass seeding the old ramp site with native grasses and red alder, planting vine maple, big leaf maple, and conifers. Also decommission an existing, compacted native surfaced loop road that connects Bruckart landing to Forest Road 19. Decommissioning would include scarifying the surface layer 2 to 4 inches in depth and seeding with native grass. The length of existing loop road that would be decommissioned is approximately 861 feet. The total approximate area that would be decommissioned is 10,000 square feet.

Alternative 3

Alternative 3 meets the need to provide and maintain opportunities for river-oriented recreation activities on the upper McKenzie River, as directed by the amended Willamette Forest Plan. The launch sites would remain in the same location where they currently exist, but would be reconstructed to reduce safety hazards and improve access. The reconstruction design reduces maintenance needs by reducing the amount of gravel that is placed on the current ramps. However, these designs would likely require 20 cubic yards of riprap at both Frissell and Bruckart. Alternative 3 would not implement the recommendations found in the Upper McKenzie River Management Plan (1992).

Actions Specific to Frissell Boat Launch:

- Install a pre-fabricated concrete ramp at the existing site, placing it at a downstream angle. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Approximately 20 cubic yards of rip-rap would be required to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed.
- Re-grade the surface of the existing parking area to minimize sediment transport to the river and incorporate the recommendations from ODOT that revises the traffic flow pattern and makes efficient use of the pullout space.
- Provide a site at the boat launch for portable toilets.

Actions Specific to Paradise Boat Launch:

The actions at Paradise Boat Launch would be the same as in Alternative 2.

Actions Specific to Bruckart Boat Launch:

- Install a pre-fabricated concrete ramp at the existing site and place it at a downstream angle. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Approximately 20 cubic yards of rip-rap would be required to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed.
- Re-grade the surface of the existing parking area to minimize sediment transport to the river and incorporate the recommendations from ODOT that uses small barrier structures and signs to revise the traffic flow pattern and make efficient use of the large pullout space. Traffic control at the launch location would be designed to provide for efficient use of space and flow of traffic.
- Provide a site at the boat launch for portable toilets.

Mitigation Measures and Project Design Measures

In addition to site specific measures identified in this document, this project would comply with all applicable Oregon State Water Quality statutes through compliance with Forest Plan Standards and Guidelines and General Water Quality Best Management Practices (USDA Forest Service, November 1988) as per the following document signed by both parties on May 10, 2002.

> NFS 02-MU-11060000 MEMORANDUM OF UNDERSTANDING between USDA FOREST SERVICE and OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY TO MEET STATE AND FEDERAL WATER QUALITY RULES AND REGULATIONS.

The General Water Quality Best Management Practices (USDA Forest Service, November 1988) requires an Erosion Control Plan. Prior to starting work, the Contractor submits a plan which sets forth erosion control measures to be used. Operations would not begin until the Forest Service has made written approval of the plan. The plan recognizes mitigation measures required in the contract. All contracts specify that operations be scheduled and conducted to minimize erosion. These measures address Forest Wide Standard and Guideline (S&G) FW-089.

Approval of the erosion control measures plan would be conducted using an interdisciplinary approach. The measures approved by the interdisciplinary team will be reflected in the contracts specifications and provisions. Monitoring and enforcement of the erosion control plan would be the responsibility of the Contracting Officer's Representative (COR). Watershed and fisheries specialists would be on the work site during in-river work.

In the case of a hazardous spill, the Willamette National Forest has a Hazardous Spill Control and Emergency Response Plan, which is consistent with S&G FW-091 (USDA Forest Service. Willamette NF, February 17, 2004). The plan contains specific information and requirements on the following:

- Emergency Notification
- Quick Response Checklist
- Hazardous Spill Coordinators & Key District Personnel
- Federal Emergency Response – U.S. Coast Guard & EPA
- Forest Service - Scope & Purpose
- Elements of the Emergency Response Plan
- Pre-emergency Planning and Coordination with Outside Parties
- Personnel Roles, Lines of Authority, Communication and Training
- Emergency Recognition and Prevention
- Safe Distances and Places of Refuge
- Site Security and Control
- Evacuation Routes and Procedures
- Decontamination
- Termination, Critique of Response and Follow Up

The plan requires the contractor to have two *Spill Response Kits* on the project site whenever equipment is operating. One spill response kit shall be sufficient to absorb 34 gallons of oil, and designed to float on the surface while absorbing oil and repelling water. Equipment shall be furnished on a fully operational basis, of modern design and in good operating condition with no fuel or oil leaks.

Specific Project Design Features for Activities In-stream or Adjacent to Streams:

- During construction activities, silt barriers will be placed as needed to prevent movement of sediment from the worksite to the river. Fisheries or watershed personnel will be consulted on the need for, and the specific locations for placement of these barriers.
- Upon completion of construction activities areas of exposed soil will be seeded or planted with native species. Areas will be mulched with weed free straw to prevent erosion and potential sediment transport.
- All equipment that will be used for instream work in the McKenzie River will be free of leaks and cleaned of grease, oil, and other solvents prior to use, and will be equipped with drip pans or diapers and water friendly fluid systems (i.e. non-petroleum based fluids).
- Fuel storage will not be permitted within Riparian Reserves (within 320 feet of fish bearing streams). Fueling sites will be designated by the COR and will not be within 150 feet of water.

- New ramps and roads will be designed to shed water into vegetation. The areas where new construction would take place are composed of glacial/fluvial material and soils are very porous and permeable. Due to these conditions no surface runoff to the river is expected. The exception to this is the ramp itself where rain water would shed to the river.
- Any trees that need to be removed for the project would be spread in the Riparian Reserve in a fashion that does not cause too much disturbance; trees that are suitable for fish habitat projects will be staged for use at a future time.
- The project will minimize the need to cut big trees would utilize previously disturbed areas.

Specific Project Design Features for Wildlife:

- Work in the McKenzie River can take place during the instream work period (July 1 – August 15). It is likely that work would occur between July 16 and August 15 due to wildlife seasonal operating periods.
- Implementation of any action alternative will have no effect to the northern spotted owl. A seasonal operating restriction from March 1-July 15 would protect nesting owls which may be present during the critical breeding season. However, the project is adjacent to highway 126 and or the McKenzie River and ambient noise levels are continually high.
- Because project activities would occur near bald eagle foraging and nesting habitat along the McKenzie River, a seasonal restriction from January 1-August 30 would be required. This restriction may be lifted if non-nesting is verified within the area.
- Project activities would occur in the riparian areas adjacent to the McKenzie River that may provide nesting habitat for harlequin ducks. Therefore, a seasonal restriction from April 1-June 30 would be required. The felling and leaving on site of individual trees for safety and parking in riparian areas would benefit this species by supplementing down woody material in their habitat. Flush cut any stumps (S&G MA 6c-12).

Specific Project Design Features for Noxious Weeds

- All equipment shall be power washed to remove all foreign or noxious seeds/weeds prior to entering Forest Service lands. Equipment will be free of all seed and debris that may contain plant seeds (i.e. soil and vegetation). Material brought in to reconstruct the boat launches, such as fill soil or gravel, will be free of weeds and weed seed.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in Chapter 2.

The cumulative effects discussed in this section include an analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive, and significant relationship to those effects. The cumulative effects of the proposed action and the alternatives in this analysis are primarily based on the aggregate effects of the past, present, and reasonably foreseeable future actions. Individual effects of past actions are not listed or analyzed, and are not necessary to describe the cumulative effects of this proposal or the alternatives. (CEQ Memorandum, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.)

Recreation Capacity and Design

Affected Environment

The Frissell Boat Launch is located within the State Scenic Waterway designated portion of the upper McKenzie River. The Paradise Boat Launch, situated within the Paradise Campground complex, is located at the western terminus of the State Scenic Waterway. Frissel and Bruckart boat launches are both located on the West Cascades National Scenic Byway. Neither facility is signed as a boat launch. No highway approach signing exists to direct recreationists to the launches. Recreational activities and recreational users are diverse in and around the boat launch locations. Scenic viewing is an important recreational activity in the corridor, especially scenic viewing from Highway 126, the river and the McKenzie River National Recreation Trail (NRT). The McKenzie River NRT begins at a developed trailhead at MP 52 on State Highway 126, which is co-located with an interpretative site designed for the West Cascades National Scenic Byway.

The McKenzie River NRT is closely associated with the Frissel boat launch and is visible from the existing launch site. A McKenzie River NRT trailhead is also located within the Paradise Day Use Area. The Paradise Day Use Area is accessed by a shoulderless, two lane paved road. This road accesses a picnic area, amphitheatre, private driveway, restrooms and the Paradise Boat Launch.

The tables below displays use for calendar year 2005. Adding together both launch and take-out, Paradise launch served a total of 6,566 of commercial clients and 331 non-commercial clients, Frissell served 2,509 commercial clients and 190 non-commercial clients while Bruckart served 386,1 commercial

clients and 184 non-commercial clients. A total of 2,250 commercial crafts and 302 non-commercial crafts used these three launches in 2005.

Non-commercial use is determined by a voluntary boater registration card system. Compliance rate of the voluntary system is estimated to be approximately 50% based on days monitored when the registration boxes were in place. Registration boxes were up April to September, but three were vandalized or removed earlier in the season. No reports were made for organized group use in 2005.

Table 2. Recreation Use at the Boat Launches in 2005

	Frissell Launch	Frissell Take Out	Paradise Launch	Paradise Take Out	Bruckart Launch	Bruckart Take Out
Commercial Clients	2,509	0	5,700	866	8	3,853
Non-Comm Clients	187	3	243	88	0	184
Total Clients	**2,696**	**3**	**5,943**	**954**	**8**	**4,037**
Commercial Crafts	489	0	953	151	6	651
Non-Commercial Crafts	66	3	99	66	0	68
Total Crafts	**555**	**3**	**1,052**	**217**	**6**	**719**

Actual numbers would increase with the estimated 50% non-commercial trips that did not participate in the voluntary registration system and by approximately 25% for the portion of the year that the boxes were not in place. Table 4 provides use numbers with the estimated increases:

Table 3. Estimated Recreation Use at Boat Launches for 2005

	Frissell Launch	Frissell Take Out	Paradise Launch	Paradise Take Out	Bruckart Launch	Bruckart Take Out
Total Clients	2,929	7	6,246	1,064	8	4,267
Total Crafts	637	7	1,175	299	6	804

Although not an issue during the Upper McKenzie River Plan (Upper McKenzie River Management Plan, 1992), crowding at river launch facilities is now known to be an increasing problem. The McKenzie River is accessed by 14 boat launches; however, there is uneven use across boat launches with some receiving the majority of use and some having almost no use. Over 500 commercial trips launched at Paradise and nearly 300 commercial trips took out at Bruckart in 2001. 71 commercial trips launched at Frissell in the same year. Commercial group sizes range from as few as one client to over 40. In 1990, approximately 4500 boaters were estimated to have floated the river stretch between Olallie and Blue River. The

majority of these boaters, both commercial and private, used Paradise Boat Launch (Moran, 1990). Records indicate that commercial use has steadily increased since 1990. Although there is inconclusive information regarding waiting times at launches, boaters have expressed frustration regarding delays at take-outs and waiting time at put-ins. Crowding and competition for parking, however, is clearly an issue at some launches, particularly at Paradise.

Issue of Recreation Capacity

The design of the launch facilities may affect the number of people and number of crafts that can be accommodated at each site at one time, and the amount of crowding that occurs at each facility. This issue is measured qualitatively. The effects are based on the degree to which the alternatives affect the number of people and number of crafts that can be accommodated at the site at one time. Factors considered when assessing each of the alternatives included degree of crowding at each facility, amount of vehicle parking area available at each launch site, amount of staging area space available at each launch site, and numbers of people and craft accommodated.

Environmental Consequences

Effects of Alternative 1 - No Action

Under the no action alternative, the amount of vehicle parking space and staging area space at each of the launch sites would not be changed. Numbers of craft accommodated at one time would not change. Crowding at launch sites could increase as river use increases over time.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell: Under this alternative there is no net gain of parking as compared to the current location of the Frissell launch. However, crowding at the launch site would be reduced by the addition of a formal staging area that is not currently available at the existing Frissell launch.

Paradise: This alternative would increase the number of people and craft accommodated at Paradise due to an increase in roadside parking, the addition of a second staging area, and the addition of another ramp allowing more than one craft to be launched at one time. Improvement of a trail access to the staging area below the ramp would reduce crowding at the shoreline.

Bruckart: Under this alternative there is no net gain of parking as compared to the current location of the Bruckart launch. However, crowding at the launch site would be reduced by the addition of a formal staging area that is not currently available at the existing Bruckart launch.

Effects of Alternative 3

Direct and Indirect Effects

Frissell: This alternative would reduce the numbers of people and craft accommodated at the Frissell launch at one time due to the redesign of traffic control to meet Oregon Department of Transportation standards along Highway 126. Total parking and staging area would be reduced at Frissell under this alternative.

Paradise: Same effects as in Alternative 2.

Bruckart: The amount of vehicle parking space at Bruckart would be reduced due to design of traffic controls to meet Oregon Department of Transportation standards along Highway 126. Crowding would not be reduced at Bruckart under this alternative as no additional staging area or pedestrian access would be developed.

Safety and Access

Affected Environment

The Frissell Boat Launch and aggregate surfaced parking area is located adjacent to State Highway 126. There is no directional signing for traffic flow in and out of the site, nor any indication of desired parking patterns. The current ramp is steep, constructed with embedded wooden poles, cabled together and placed in a step pattern to retain the aggregate from sloughing into the river. The ramp is on the outside of a curve and high river flows routinely erode the bottom of the ramp. Regular aggregate replacement is required to keep this ramp in its current condition. It is generally positioned perpendicular to the river. The bottom of the ramp exceeds 50% grade. The middle portion is approximately 30% grade with the top leveling out to a 15% grade. Over the entire ramp the average grade is 26%.

Paradise Boat Launch is in a developed day use area with paved access road and parking areas. There is a paved one-way loop road that provides convenient truck and trailer access to the ramp. The current ramp is aggregate and wide enough for two crafts to put in unless the first one in decides to use the middle of the ramp. There have been complaints that the grades are too steep and when rigs pull out of the ramp they spin their tires and throw aggregate. This ramp requires minor annual maintenance.

Bruckart Boat Launch is in many ways similar to Frissell Boat Launch, located adjacent to the state hwy 126, aggregate parking area and a steep ramp located on the outside of a curve in the river. During high flows the ramp is undercut. Efforts at minimizing this have been made by placing large riprap up stream of the ramp and are successful for a few years time. The current ramp is asphalt with grades exceeding 35% at the bottom of the ramp and decreasing to 15% at the top. Over the entire ramp the average grade is 22%.

Issue of Safety and Access

High velocity river flows at Frissell and Bruckart sites make it hazardous to launch or land at these facilities. Analysis of this issue included the qualitative description of river velocity in the immediate area of the launch and proposed locations by alternative. A qualitative estimate was chosen to capture the safety considerations. River velocities are described qualitatively in the immediate vicinity of existing ramps and proposed relocation sites.

The steep condition of the ramps at Frissell and Bruckart also make it hazardous for people to access the boats. Analysis of this issue is also measured by the grade of the ramp, location of ramp, and surface type of ramp existing ramps in relation to proposed designs.

The effects of the alternatives on this issue are based on the degree to which the alternatives affect the safety of the users in accessing boats and rafts. Factors considered when analyzing each of the alternatives included the percent slope of each ramp and the angle of Frissell and Bruckart ramps to the river.

Environmental Consequences

Effects of Alternative 1 – No Action

Under the no action alternative, the percent slope of each ramp and the angle of the ramps would not be changed. Consequently, the safety of the users while accessing boats and rafts would not be changed. The ramps would remain in their current locations at Frissell and Bruckart which would maintain their site on the main current side of the river channel. There would therefore be no change in the hazardous conditions at these launch locations. Since Paradise launch is at the bottom of a cobble bar in relatively quiet water it is not as hazardous to launch from. Under the no action alternative the condition would remain the same.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell: This alternative of relocating to below Frissell-Carpenter Bridge would increase the safety of the users while accessing their river craft by reducing the grade of the ramp. The relocation site downstream of Frissell-Carpenter Bridge is on the inside of the river bend near the top of a small cobble bar. It creates conditions where the river bank is not as steeply entrenched and the river velocities are less than current ramp locations. All of these conditions make it possible to place a boat ramp at a relatively flat grade (12-15%) and improve access conditions.

Paradise: Since Paradise launch is at the bottom of a cobble bar in relatively quiet water it is not as hazardous to launch from, but this alternative should increase the safety of the users by reducing the grade of the ramp, increasing the width and providing a concrete surface.

Bruckart: Relocating the ramp to below Bruckart Bridge would increase the safety of the users while accessing their river craft by reducing the grade of the ramp. It would also improve conditions for landing craft at the launch. The relocation site downstream of Bruckart Bridge is on the inside of the river bend near the top of a small cobble bar, which creates conditions where the river bank is not as steeply entrenched and the river velocities are less than current ramp locations. All of these conditions make it possible to place a boat ramp at a relatively flat grade (12-15%) and improve access conditions.

Effects of Alternative 3

Direct and Indirect Effects

Frissell: Alternative 3 would increase the safety of the users by reducing the grade of the ramp and providing a concrete surface. The ramp would be constructed at an approximately 45 degree angle to the river. This increases the horizontal length of the ramp, reducing grades to 20% or less.

This alternative maintains the ramp on the main river current side of the channel. Changing the angle of the ramp and reducing its grade would reduce hazards associated with accessing the boat by foot and loading into the boat. However, by keeping the ramp in its current location, it retains those hazards associated with fast moving water (i.e. difficult landing and launching). In contrast, Alternative 2 would have a greater reduction in hazards due to a relative reduction in river currents on the inside bend of the river channel.

Paradise: Same as in Alternative 2

Bruckart: This alternative would increase the safety of the users by reducing the grade of the ramp and providing a concrete surface. The ramp would be constructed at an approximately 45 degree angle to the river, which increases the horizontal length of the ramp and reducing the grade to 15% or less. The safety of vehicle traffic in and out of the site would be increased by signing and pavement markings.

This alternative maintains the ramp on the current side of the main river channel. Changing the angle of the ramp reduces its grade and reduces hazards associated with accessing the boat by foot and loading into the boat. However, by keeping the ramp in its current location retains those hazards associated with fast moving water (i.e. difficult landing and launching). In contrast, Alternative 2 would have a greater reduction is hazards due to a relative reduction in river currents on the inside bend of the river channel.

Cumulative Effects

The existing boat ramps and launches at Frissell, Paradise, and Bruckart have evolved since they were built, and have been contributing to river-oriented recreation opportunities for the public over the past several decades.

Ramp relocations at Frissell and Bruckart, with more defined parking and staging areas and the improved access at Paradise in the Alternative 2, accommodate the existing demand by the public and reduce crowding. At Paradise Day Use Area, more people and water craft may be accommodated at one time. Under Alternative 2, access and safety would be improved for people and water craft due to firmer or more stable ramp surfaces and reduced slopes.

Although Alternative 3 improves access and reduces safety hazards Frissell and Bruckart, currently available parking space and staging areas may be reduced to accommodate the redesign of traffic controls to meet highway transportation standards.

There are no reasonably foreseeable future management actions which would contribute to changing the capacities for launching boats, amount of parking space for vehicles, designation of staging areas, ramp slope and surface, access or safety for people utilizing these facilities. No further improvements to the three boat launch facilities and no development of additional boat launch facilities are planned.

Threatened, Endangered, Sensitive (TES) Fish, and Management Indicator Species (MIS) Fish

Affected Environment

The bull trout (*Salvelinus confluentus*) and the Upper Willamette spring chinook salmon (*Oncorhynchus tshawytscha*) are both species listed as threatened under the Endangered Species Act. Coastal cutthroat trout (*Oncorhynchus clarki)* and rainbow trout (*Oncorhynchus mykiss)* are Management Indicator Species (MIS). All species can be found in the project area during portions of their life history.

Migratory Habitat

There are no barriers to migration in the project area. Trail Bridge Dam is a barrier to migration in the main stem McKenzie River and is approximately five miles upstream of Frissell Boat Launch (the most upstream of the three launches in the project area).

Spawning Habitat

Cutthroat trout tend to spawn in small tributaries of the McKenzie River. Rainbow trout have been observed spawning in the mainstem McKenzie River, but no redds were observed during spawning ground surveys.

Bull trout do not spawn near any of the boat launch locations. Bull trout spawning occurs in tributaries over 4 miles upstream of Frissell Boat Launch where ground water from the high cascades provides stream temperatures cold enough for incubation and early rearing.

Spring Chinook salmon spawn throughout the McKenzie River. Important areas include the tail-outs of pools, side channels, and gravel depositional areas associated with large wood or some other physical

feature. Spawning ground surveys have been conducted at all boat launch sites and the following paragraphs summarize results of those surveys.

At Frissell, the river at the existing site and the proposed site are high velocity rapids. This does not provide suitable spawning habitat for TES/MIS fishes. The closest spawning site downstream of the Frissell location is at tail-out of "Blue Pool" which is approximately ½ mile downstream. One spring Chinook redd was observed at Blue Pool in 2006.

At Paradise, the channel downstream of the ramp on river left is a rapid and is bordered by rip-rap along Paradise campground. This does not provide good spawning conditions for spring Chinook salmon. However, shallow margin habitat on river right (the inside of the river bend) could provide spawning sites but no redds have been observed during spawning ground surveys. Side channels further downstream (about 1 river mile) are areas of known salmon spawning.

At Bruckart, the closest known salmon spawning habitat is 1,000 feet downstream of proposed ramp site. Chinook have been seen spawning 500 feet downstream of the existing Bruckart Boat Launch on the opposite side of the river. Turbidity is not expected to reach any further than 300 feet downstream, and if a pulse did occur due to rehabilitation or construction activities it would not cross the river, but rather would stay on the main current side of the river.

Rearing Habitat

Bull trout have specific habitat requirements depending on the life history stage. Bull trout fry and juvenile rearing habitat is found in the same streams where spawning occurs. Some older juveniles (3 and 4 year old) could rear in the vicinity of Frissell Boat Launch due to the cold temperatures in the river, but it is unlikely these juveniles rear downstream near Paradise and Bruckart boat launches. Sub-adult (4 and 5 year old) and adult (5 years and older) have suitable water temperature conditions at all three boat launch locations, but deep pools are absent at the launch sites. Deep pools are an important habitat element for rearing sub-adults and adults.

Important rearing habitat for spring Chinook salmon include deep pools for both adults holding during the summer and juveniles rearing during downstream migration. Juveniles also require quiet areas in the river to rear such as side channels and river margins especially near physical features like large wood or boulders. These areas are located throughout the project area, but deep pools are absent at the launch sites.

Issue of TES/MIS Fish Migratory, Spawning, or Rearing Habitat

The location of boat ramps could affect TES/MIS fish migratory, spawning, or rearing habitat.

Unit of Measure. The analysis of this issue used qualitatively descriptions of the effects of project implementation. This description considered the quality of migratory, spawning, and rearing habitat of MIS (rainbow and Coastal cutthroat trout) and ESA listed species (spring Chinook salmon and bull trout) in current locations and proposed relocation sites.

Environmental Consequences

Effects of Alternative 1 – No Action

Direct and Indirect Effects

Migratory Habitat – There would be no change to migratory habitat for any fish species with the implementation of Alternative

Spawning Habitat – The boat launches do not have a direct effect on spawning habitat for TES/MIS fish because spawning habitat does not exist in direct proximity to any of the existing ramps. All bull trout spawning in the McKenzie River occurs upstream of Frissell Boat Launch (in Anderson and Olallie creeks), and therefore none of the alternatives have the causal mechanisms to affect bull trout spawning. During field investigations the closest spawning habitat found for other salmonid fishes (both TES and MIS) was downstream of the ramps at Bruckart. Spawning Chinook salmon were observed approximately 500 feet downstream of the existing ramp and on the opposite side of the river. At Frissell, the closest spawning was at Blue Pool, which is approximately ½ mile downstream; and at Paradise, the closest spawning habitat was over 1 mile downstream.

Cutthroat trout primarily spawn in tributaries to the McKenzie River so it is highly unlikely that the boat ramp project could affect their spawning habitat directly, or indirectly. Rainbow trout have been observed spawning in the main stem McKenzie River. However, the closest potential spawning sites are about ½ mile downstream from Frissell, about 1 mile downstream of Paradise, and about ¼ mile downstream of Bruckart.

Boat launch use and maintenance can have indirect effects on spawning habitat due to the need to occasionally replace gravel on ramps. Fine sediment associated with replaced aggregate could potentially impact spawning areas. However, it is unlikely that the amount of fines associated with regular gravel maintenance have measurable adverse affects on spawning habitat. For example if Alternative 1 were selected, gravel placed at ramp sites in order to maintain them would continue when needed. Typical quantities of gravel required to maintain the ramps are 1-2 cubic yards per year for all three ramps. However, there are years when no gravel is required for maintenance. Most of the gravel is placed at Frissell and Bruckart due to their positioning on the bank where they are subjected to the main river current. A "sediment budget" of the upper McKenzie River was recently conducted by Stillwater Sciences as a study for the Eugene Water & Electric Board (Stillwater Sciences 2006a). The study provided an estimate of average annual sediment yield in metric tons per year ($t\ y^{-1}$) for the upper McKenzie River, and the cumulative results for sediment yield up to the confluence of Scott Creek were 25,450 $t\ y^{-1}$. Scott Creek is just downstream of the Frissell launch site. Given the relatively minor amount of gravel that is used to maintain the ramps this alternative if selected would not have a significant effect on fish habitat in the main stem McKenzie River. In addition, during spawning ground surveys below all boat ramps in 2006 those gravel patches where spawning was possible did not visually appear to be adversely affected by fine sediments. The ongoing use and maintenance of the boat ramps could potentially affect spawning

habitat for TES/MIS fish but given study findings (Stillwater Sciences 2006a) and field investigations conducted by fisheries personnel, it is unlikely that ramp maintenance is having negative affects on spawning habitat.

Rearing Habitat – The type of river habitat needed for rearing TES/MIS fish (e.g. deep pools, pocket pools, or shallow river channel margins) depends on the species and life history stage of the particular fish.

The amount of gravel needed to maintain the ramps relative to the natural sediment regime is not sufficient to fill deep pools, or pocket pools given the stream discharge of the river and its ability to mobilize and transport gravel size sediments. Maintenance can have potential affects to margin habitat in direct proximity to the river. This would primarily affect Chinook salmon fry, and rainbow trout fry that would seek this shallow, low velocity habitat for cover after emergence from the redd. Sediments from the ramp could affect the spaces between cobbles (interstitial spaces) where small fish can take cover, however this impact would be limited to an area in direct proximity to the ramp and would likely change with seasonal flow regimes.

It is highly unlikely that bull trout fry would be found in direct proximity to the ramps due to the temperature regimes. Buchanan and Gregory (1997) indicate that optimal "early" fry rearing takes place at temperatures 4 - 4.5^{o} C (39.2 - 40.1^{o} F) and "late" fry rearing at temperatures from 4 - 10^{o} C (39.2 - 50.0^{o} F). Spence and others (1996) also indicated that these temperatures were optimal. Table 6 below displays stream temperature data collected by the Forest Service. Bull trout fry rear in streams like Olallie Creek and Anderson Creek where temperatures are cold. In the river temperatures are warm relative to the bull trout "natal" streams. River temperatures at Frissell Boat Launch are approximately 10.1^{o} C as measured by Stillwater Sciences in 2005 downstream of Deer Creek, and all other main stem temperature (McKenzie River near Ranger Station [relatively close to Paradise], and the USGS gage at Bruckart Boat Launch – Table 7) show summer temperatures above 12^{o} C which is too warm for optimal bull trout fry rearing. In addition to temperature conditions, the flow conditions in the river are high relative to the spawning tributaries and a small bull trout fry would have difficulty finding cover in the river. During field investigations no bull trout fry were located at any of the boat launch sites.

Spring Chinook fry can use margin habitat after emergence from the redd, but as the grow they will move to pocket pool habitat and eventually they will school in large, deep pools. Boat ramp maintenance could affect river margin habitat which in turn could affect fry habitat. As with rainbow and cutthroat trout fry, the effects would be limited to the area in direct proximity to the ramps and would be seasonal in nature. Relative to the amount of rearing habitat the McKenzie River provides for salmonid fishes, the impact to river margin habitat if Alternative 1 is selected is minor.

Table 4. Stream Temperature Data Collected by the Forest Service in 2005

Stream Name	Geographic Description of Sensor Location	Geologic Province	7-Day Average Maximum in Degrees Celsius	Date of Maximum Temperature
Anderson Creek (Boulder Cr / Frissell Cr 6th)	At Highway 126	New High Cascades	**6.6**	September 14
Boulder Creek (Boulder Cr / Frissell Cr 6th)	Near Mouth	Old High Cascades[a]	**13.1**	August 8
McKenzie River (Boulder Cr / Frissell Cr 6th)	Below Trail Bridge Dam	Primarily High Cascades at this point, but influenced by Smith River watershed and Trail Bridge Reservoir upstream	**10.6**	August 4
McKenzie River (McKenzie Bridge 6th)	Near Ranger Station	McKenzie River Glacial Valley[b]	**12.2**	August 9
Olallie Creek (Boulder Cr / Frissell Cr 6th)	At Highway 126	New High Cascades	**5.5**	July 10
Scott Creek (Boulder Cr / Frissell Cr 6th)	Near Mouth	Old High Cascades	**12.2**	August 10

[a] The term Old High Cascades is used only to describe how Scott Creek and Boulder Creek cut through Pleistocene glacial deposits and "New" High Cascade lavas in their headwater areas, but further downstream incise underlying older High Cascades lava that have been subjected to fluvial processes for a longer period of time and McKenzie River glacial deposits.
[b] The term "McKenzie River Glacial Valley" is used at this site since because the river is in a glacial valley confined by two east-west trending ridges, but is not a recognized province name.

Information was reviewed for the USGS gauge that is located immediately adjacent to Bruckart Boat Ramp. The USGS name for this gage location is:

- McKenzie River above South Fork near Rainbow, Oregon.
- USGS ID: 14159110

Table 5. Data from USGS Gage near Bruckart Boat Ramp in 2005

Date of 7-Day Average Maximum	Temperature in Degrees Celsius
July 20	13.7
August 8, 9, 10, and 11	13.5
September 1	12.2
September 30[a]	9.8

[a] The 7-day avg max for the month of September was on the 1st. The September 30 7-day avg max is provided to show the decreasing trend in temperature during the month of September.

Cumulative Effects of Alternative 1, No Action

The installation of the boat ramps and launch facilities at Frissell, Paradise, and Bruckart, have resulted in a situation that requires the annual input of gravel to the boat ramp structures to replace annual removal during high flows. The no-action alternative would not change the current need for added gravel each year. As stated above, relative to the natural sediment regime in the river, the amount of gravel used to maintain the boat ramps is having minor effects to fish habitat. Those effects are found in direct proximity to the ramps where fines can affect the interstitial spaces where rainbow, cutthroat, and Chinook fry could take cover.

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell Boat Launch – The relocation activities would take place on the southwestern terrace in a river bend. Individual trees removed at this site on the terrace would include Douglas-fir and western red cedar, and red alder where approximately a 12-16 foot wide area at the ramp location. Some of the upland trees and all the red alder provide shade to the river. However, the removal of these trees is not expected to have a measurable effect on stream temperatures for the following reasons. The majority of crowns on the large conifers would be maintained through project design, which avoids big trees where possible. Spring-fed flows from ground water sources dominate the river flow at this site during the summer and the removal of individual trees (approximately 12 to 20 red alder) would not be of the magnitude that the impacts could be measured at the site scale or the sub-watershed scale.

Evidence for this rationale can be found in the temperature monitoring results for the McKenzie River upstream and downstream of the Deer Creek confluence. Deer Creek is about 3 river miles upstream of the Frissell Boat Launch site and it contributes "warm" water to the McKenzie River that is 19.0 degrees Celsius (66.2 degrees Fahrenheit) in temperature (7-day average maximum in 2005). Monthly maximum 7-day average temperatures in the river above and below the Deer Creek confluence were 9.3o C (48.7o F) and 10.3 (50.5o F) in 2004 (Stillwater Sciences 2006b). In 2005, temperature monitoring above and below recorded 9.3o C (48.7o F) and 10.1 (50.2o F) (Stillwater Sciences 2006b). If a stream system the size of Deer Creek (a 23 mi2 watershed) contributes warm 19.0o C water to the river, and can only have a 1o C (1.8o F) impact on temperatures, it seems extremely unlikely that the removal of a dozen or so red alder and individual upland trees in a spring-fed dominated location could be measurable.

The new ramp would cover approximately 640 square feet. The ramp would extend into the river approximately 10 to 15 feet from bank-full width. Up to 240 square feet of concrete pad would be in the river channel. The approximate area of disturbance for the loop road, staging area, and concrete pad for the toilet would be 10,936 square feet.

Construction of the two pull outs along Forest Road 2650 would occur on disturbed ground and no new fill would be required to improve them. These existing pull outs are approximately 50 feet in length and 90 feet in length, and are both 10 feet wide (total area of 1,593 square feet – this figure includes "tapers" on the pullouts). Since no new ground would be disturbed to improve these pull outs (i.e. they are already disturbed ground) the square footage of "improvement" is not included in the total area of disturbance shown in the following table.

Table 6: Summary of Project Area Impacts Described Above[a]

Site	Total Area of Impact in Sq Ft.	Total Area Decommissioned in Sq Ft.	Total Area of Concrete Ramp in Bankfull Width in Sq Ft.[b]
Frissell	10,936	2,670	240
Paradise	3,439	0	480
Bruckart	19,900	10,000	240

[a] These figures are approximate as designs are conceptual, and they represent a "worst case scenario." That is, the total area impacted will likely be less and the total area restored will likely be greater. All of the area summarized is within the Riparian Reserve.

[b] This figure is included in the "total impact" column and represents the amount of ramp that would be "in the water" during normal flows.

Decommissioning the existing boat launch on river-left involves removing the existing buttress logs and cable from the site. The river bank and a portion of the terrace would be restored. A portion of the existing pull-out access would remain for motor vehicles along State Highway 126 (see Appendix F, Figure 5).

The decommissioned boat ramp location and a portion of the highway pullout would be restored. The large pull out would be rehabilitated by importing topsoil and re-shaping the surface. The ramp site would include seeding with native seed and red alder, planting vine maple trees, big leaf maple, and conifers (Douglas-fir or Western red cedar depending on what is available). The vegetation would be monitored thru the seasons (for up to 2 years) and if the site requires additional seeding or tree planting due to mortality or for any other reason, it would take place during the appropriate planting season.

The large pull out would be rehabilitated by importing topsoil and shaping it into hummocks. These hummocks would also be seeded with native grass to serve as a barrier between the highway and the river by acting as a soil filter and as a berm that diverts water into existing vegetation. Vegetated hummocks are desired since this is along the West Cascades National Scenic Byway. The measure would keep vehicles from driving onto the area. The approximate area of decommissioning for these actions totals 2,670 square feet.

Paradise Boat Launch –Alternatives 2 and 3 take the same actions at Paradise Boat Launch, which would occur on the south river bank. The parking lot work in the day use area is far enough away (100 to 150

feet) from the river that trees removed would not impact shade conditions. No tree removal is proposed at the ramp location and staging area location.

The replacement concrete ramp at the existing site would have a decreased gradient relative to the existing ramp and would measure 40 feet by 32 feet (1,280 square feet). The approach road is currently paved so the only new paving expected at the ramp would be the apron in order to connect the loop road to the concrete ramp (approximately 710 square feet of new pavement). The ramp would extend into the river approximately 10 to 15 feet from bank-full width (up to 480 square feet of concrete pad in river channel). The total area at the ramp site that would be concrete and asphalt is approximately 1,990 square feet.

An excavator would need to wade approximately 25 feet into the river to place the 20 small boulders, 16 inches to 24 inches in diameter, further into the channel where the river can mobilize and relocate them. The river is approximately 145 feet wide in this location.

The road side parking sites in the day-use area are approximately 125 to 150 from the river and are currently used as unpaved parking spaces. This "additional" road side parking would formalize the areas by paving the bare sites. Some small trees less than 6 inches in diameter (big leaf maple, Western hemlock, and vine maple) would need to be cut. The additional areas would be 50 feet by 10 feet, and 80 feet by 10 feet which would increase the impervious area in the Paradise day use area by 1,449 square feet (this figure includes "tapers" on the pullouts).

An additional staging area close to the launch area would be designated by signing an area not currently vegetated (it is a former historic camp site established by the CCC). No aggregate would be placed on this staging area, and no real "on the ground" changes would occur except for signing to designate it as a staging area.

An existing user-trail that is within bank-full width would be improved by placing spawning size gravels (1 to 3 inch), relocating large woody material, and trimming riparian vegetation (Figure 7). This user trail is approximately 20 feet away from the river during base flow conditions. The rationale for placing spawning size gravel on the trail is due to its location within bank-full width. When floods mobilize gravel on the user trail, it would at least be appropriate for spawning in whatever location the river places it. The piece of wood to be relocated is 22 feet in length by 19.5 inches in diameter. It would be moved upstream onto the cobble bar to remain within the bank-full channel. The riparian vegetation to be trimmed is along the user trail and is comprised of alders and vine maple.

Bruckart Boat Launch – Relocation of the ramp to the new site downstream from Bruckart Bridge is on the same side of the river (river right). Therefore, all actions would occur on the north river bank and trees removed in this proposal would not be shade trees for the river, so no impact on stream temperatures at the site scale is anticipated.

The ramp would be prefabricated concrete, 16 feet wide by 40 feet in length (640 square feet) and would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). The access road, loop road, turnout, parking stalls, staging area, and concrete toilet pad at the new have been designed to minimize the number of large trees to be felled and moved. The total approximate area of disturbance for these actions is 19,840 square feet.

The additional parking along Forest Road 19 would require fill material to widen the shoulders and paving. One parking area on the opposite side of Road 19 would be 90 feet long by 10 feet wide (900 square feet), and the other would be 150 long by 10 feet wide (1,500 square feet) The total area of parking expansion would be approximately 2,400 square feet.

Decommission the old site would require grass seeding the old ramp site with native grasses and red alder, planting vine maple, big leaf maple, and conifers (Douglas-fir or Western red cedar depending on what is available). The vegetation would be monitored thru the seasons (for up to 2 years) and if the site requires additional seeding or tree planting due to mortality or for any other reason, it would take place during the appropriate planting season.

Decommission the existing loop road that connects Bruckart landing to Forest Road 19 would be done by scarifying the surface layer 2 to 4 inches in depth. The road is a compacted, native surface road. The underlying subsoil is comprised of glacial-fluvial deposits that are very permeable and porous so no surface runoff is expected after scarification. Native grass seed would be applied to the scarified surface to prevent soil erosion and would be monitored for 2 years. If for any reason further seeding is required, it would take place during the appropriate planting season. The length of existing loop road that would be decommissioned is approximately 861 feet. The total approximate area that would be decommissioned is 10,000 square feet.

The use of equipment in and adjacent to streams could result in a risk of introduction of petroleum and other contaminants into the McKenzie River. Mitigation measures are in the design of the alternative to avoid this risk. Any equipment used for reconstruction or relocation activities that are in or directly adjacent to water would be required to use lubricating products other than petroleum. That is, vegetable oil based lubricants. Equipment would be required to be clean and free of any leaks before working in or directly adjacent to water.

Migratory Habitat: The implementation of the proposed action would have no direct effect on migratory habitat since it would not create barriers to upstream or downstream migration routes.

During in-river work to place the prefabricated concrete ramp there could be short term (measured in an hour or hours, not days) indirect effects due to turbidity pulses that "hug" the river bank where work is occurring. These pulses could cause migrating fish to move from turbid water to clear water and potentially delay the fish from migrating. However, since the turbidity pulse would be measured in hour(s) and not take up the entire river channel, any delay would be minor. In addition, river conditions at the new ramp sites and at Paradise are such that the deeper side of the channel is across the river from the

ramp where adults would be migrating during the summer months to their spawning areas. Based on previous work done on the boat ramp at the McKenzie Bridge campground, a turbidity pulse would be expected to "hug" the river bank where work is occurring and dissipate within 100 feet. Best Management Practices requirements would not allow a turbidity pulse to be visible 100 feet downstream of the work site that lasts half an hour, and based on the work done at McKenzie Bridge campground boat ramp it is expected that this BMP could be met.

Spawning Habitat: No effect to cutthroat spawning habitat is expected since they typically spawn in tributaries to the McKenzie River. No effect to bull trout spawning habitat is expected since they spawn in tributaries upstream from Frissell Boat Launch. No direct effects to spawning habitat are expected from the proposed action on any salmonid fish since no habitat exists in direct proximity to the proposed ramp sites or at Paradise.

A potential exists for indirect effects to spring Chinook salmon and rainbow trout in the form of fine sediments impacting redds, but they are expected to be immeasurable. This is because of the distance downstream to spawning locations.

At Frissell, the closest known spawning habitat for Chinook salmon or rainbow trout is at Blue Pool which is about ½ mile downstream of the proposed ramp location. Implementation of the proposed action could have an indirect effect on spawning habitat at Blue Pool if the turbidity plume reached that far. However, BMP's should prevent such an effect from occurring.

At Paradise the closest known spawning habitat is approximately 1 mile downstream and effects from activities at the boat ramp are not expected to have any effect on spawning habitat.

At Bruckart, the closest known spawning habitat downstream of the proposed boat launch is over 1000 feet away, and no effects from construction activities are expected to reach this far downstream.

Rearing Habitat: As was discussed in analysis for the no action alternative, this alternative is not of the scope that it would negatively affect rearing habitat that exists in the form of deep pools, or pocket pools. It would however change the river margin habitat from a natural substrate to a concrete boat ramp. The area of this impact would be limited. Frissell and Bruckart would impact approximately 240 square feet each, and Paradise 480 square feet. In addition to this impact, decommissioning activities at the old ramp sites would improve river margin habitat at Frissell and Bruckart. A length of river bank about 20 feet at Frissell and about 25 feet at Bruckart would be restored.

Given the amount of river margin habitat in the main stem McKenzie River relative to these impacts, the proposed action is not expected to have negative affects on the overall condition of rearing habitat of salmonid fish populations. However, the ramps would negatively affect a specific area of previous river margin habitat to concrete.

Cumulative Effects

With implementation of the proposed action, regular maintenance at the existing, poorly designed boat ramps would be eliminated. There would no longer be the need to place gravel on these sites and that would reduce the amount of sediment entering the river from human caused sources. The new ramps would be located on the less erosive side of the river and would be made of concrete. They would not require annual gravel supplementation for maintenance and hence less fine sediment should reach the river.

The decommissioning of the old boat ramps at Bruckart and Frissell would rehabilitate what are now bare river banks on the erosive side of the river. By vegetating these slopes this would reduce the amount of fine sediment entering the river at these sites. The current ramps at Brukcart and Frissell are designed to provide a direct avenue for surface runoff from the highway and parking areas to the river. Rehabilitation activities on the terraces would decrease the amount of direct surface runoff that enters the river. Rehabilitation would improve infiltration into the soil and ensure that surface runoff was directed thru vegetation before entering the river, which would be a beneficial cumulative effect to water quality, and hence to fish.

Considering the cumulative effects of the three boat ramps and launch facilities, Alternative 2 would result in decreased annual sediment release into the river in the proximity of the boat ramps, thereby reducing the cumulative effects of past action which installed poorly designed boat launches along the upper McKenzie River.

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Effects of Alternative 3

Direct and Indirect Effects

The Frissell and Bruckart launch sites would remain in the same location where they currently exist, but would be reconstructed to reposition them to reduce safety hazards and improve access. The repositioning requires 20 cubic yards of riprap placed at both ramps. The reconstruction design reduces maintenance needs by reducing the amount of gravel that is placed on the current ramps each year.

Frissell Boat Launch – The pre-fabricated concrete ramp at the existing site would be placed it at a downstream angle and would require 20 cubic yards of rip-rap to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Five or six small trees would need to be cut down to place the new ramp at an angle. There are 5 hardwood trees (red alder and big leaf maple), and one Western red cedar. The existing parking area would be re-graded to minimize sediment transport to the river.

Paradise boat Launch – The actions at Paradise Boat Launch would be the same as in Alternative 2.

Bruckart Boat Launch –The pre-fabricated concrete ramp at the existing site would also be placed it at a downstream angle and would require 20 cubic yards of rip-rap would be required to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Six or seven small trees would need to be cut down to place the new ramp at an angle, which consist of 5 hardwood trees (red alder and big leaf maple), and two small Douglas-fir. The existing parking area would be re-graded to minimize sediment transport to the river.

Migratory Habitat

The effect to migratory habitat would be similar to Alternative 2 (i.e. a short term turbidity plume that could displace fish to the other side of the river, or delay migration). The new ramps would not pose a migratory barrier to any TES or MIS fishes, so there would be no direct or indirect effect to migratory habitat.

Spawning Habitat

The effects to spawning habitat would be similar to Alternative 2. That is, there is a potential for mobilized fine sediments to affect downstream spawning areas for rainbow trout and spring Chinook salmon. However, like Alternative 2 these effects are expected to be immeasurable due to the distance to downstream spawning locations.

Rearing Habitat

Alternative 3 would change specific locations within the river from natural river bed to concrete. The area would be similar to the area affected in Alternative 2, but the rearing habitat at the existing Bruckart and Frissell boat ramps is not optimal rearing habitat for juvenile TES or MIS fish due to the flow velocities. These two ramps are located on the side of the river where the main current is directed (the erosive side of the channel) and it would be difficult for small fish (fry) to take cover in these areas compared to the new ramp locations in Alternative 2.

Since the ramps would be constructed on the erosive side of the river they would likely require rip rap to minimize scour due to river flows. Approximately 20 cubic yards of rip rap would be required at Bruckart and Frissell. Schmetterling and others (2001) found that rip rap may provide habitat for juvenile salmonids and bolster densities on reaches of stream that have been "severely degraded." They also found that rip rap does not provide the intricate habitat requirements for multiple age classes or species of fish provided by natural vegetated stream banks. Streambanks with rip rap have fewer undercut banks, less low-overhead cover and are less likely than natural streambanks to contribute large woody debris to the

stream (Schmetterling et. al. 2001). These examples of habitat simplification due to rip rap could be expected if Alternative 3 was implemented.

Cumulative Effects of Alternative 3

This alternative would reduce the amount of gravel required to maintain existing boat ramps due to their replacement with concrete ramps. However, since Bruckart and Frissell would remain on the erosive side of the river they would require rip rap to minimize scour. This rip rap along with a change from natural river bed to concrete would simplify habitat for TES and MIS fish. These salmonid fishes require complex habitats in order to carry out their life history requirements.

Highway 126 is directly adjacent to the river in some segments and in these areas rip rap is present. Paradise campground is also adjacent to the river and in some sections rip rap has been placed to armor the bank and protect the campground. If Alternative 3 was implemented, it would increase the amount of river bank with rip rap. Cumulatively this leads to simplification of habitat for TES and MIS fish which could have negative effects on their ability to fulfill life history requirements (e.g. freshwater rearing)

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Heritage Resources

Before the 1856 Dayton Treaty, west-side Indian tribes (likely ancestors of the Molalla and Kalapuya) used the upper McKenzie River area. Although there were no resident Indian bands in the South Fork McKenzie drainage at the time of white settlement, a band of Kalapuya Indians lived in a village at the mouth of the McKenzie, near its confluence with the Willamette River. They may have visited or traveled through the area during the summer. However, once they were relocated to the Grand Ronde or Siletz reservations in the mid to late 1850s, they could not easily get to the area. From 1860 to 1920, bands from the Warm Springs Reservation visited the area, gathering huckleberries, hunting, and grazing ponies in the summer and early fall. The area was also used for sheep grazing at the turn of the century from 1880-1920.

Field surveys for the Boat Launch project did not locate any new cultural sites at Frissell, Paradise, or Bruckart boat launches where proposed actions or alternative actions would occur. In addition, no cultural sites have been located in previous surveys of the area.

Implementation of Alternatives 1, 2, and 3 would not directly nor indirectly affect heritage resources since there would be no change to the integrity of heritage resource sites. During implementation, the District Archeologist would evaluate any subsequent discoveries.

Wildlife

Affected Environment for MIS/TES

Management Indicator Species (MIS) were addressed in the Willamette Forest Plan. They include the spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagle, peregrine falcon, and fish. All of the management indicator species may occur in the project area. Through Region-wide coordination, each Forest identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of MIS. Management recommendations to ensure their viability were incorporated into all Willamette Forest Plan actions. Current conditions for the spotted owl and bald eagle are discussed in Appendix B, the Wildlife Biological Evaluation.

The Endangered Species Act (ESA), administered by the U.S. Fish and Wildlife Service (USFWS), mandates protection of threatened and endangered species. Listed species are typically habitat-specific with narrow geographic and environmental distributions. Proposed, threatened, endangered, and sensitive (PETS) species have specific requirements under the ESA and Willamette National Forest Plan to maintain viability. Protection includes managing habitat to minimize impacts, as well as prohibition of noise disturbance during the breeding season. Consultation is required with USFWS on activities that may affect these species or their habitat.

The scale of analysis for the northern spotted owl, a Threatened Species, and other MIS is the project area because of the known distribution of spotted owls and associated owl home-range delineations. Past surveys for spotted owls have documented three spotted owl activity centers within 1.2 miles of the boat launch project. These three owl pairs have an established 100-acre late successional reserve delineated for each site.

Bald eagles have been observed flying through the McKenzie River corridor. Eagles utilize large old-growth conifers in proximity to large water bodies and abundant prey. Annual surveys are conducted to determine eagle use and occupancy.

Project activities would occur in the riparian areas adjacent to the McKenzie River that may provide dispersal habitat for harlequin ducks.

All boat launch areas are adjacent to highway 126 and the McKenzie River where ambient noise levels are continually high and where the large open corridors provide poor habitat due to exposure from aerial predators such as goshawks and great horned owls.

Survey and Manage Wildlife Species

On January 9, 2006 Judge Pechman signed an Order on Plaintiffs' Motion for Injunctive Relief that set aside the March 22, 2004 Survey and Manage ROD, reinstated the January 2001 Survey and Manage ROD, and instructed affected Forest Service and Bureau of Land Management units to "not authorize, allow, or permit to continue any logging or other ground disturbing activities on projects to which the

2001 ROD applied unless such activities are in compliance with the provisions of the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004).

To comply with this order, Forest Service and Bureau of Land Management units are required to survey for 2001 ROD (amended March 2004) Category A and C species.

Surveys were conducted for Survey and Manage and Protection Buffer Wildlife Species in all areas proposed for ground disturbing activities, prior to the effective date of the March 2004, amendment. No Survey and Manage mollusks, red tree voles, or great gray owls were found during these surveys.

Migratory Land Birds

Migratory landbirds and their required protection are outlined in the January 11, 2001, Executive Order "Responsibilities of Federal Agencies to Protect Migratory Birds." A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001, Executive Order. Agreed-to measures include identification of habitats needed by priority species. Habitats vary broadly for this large group of species. The Boat Launch Project Area contains populations of migratory landbirds typical of the western Cascades.

There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette National Forest have been identified as species of concern (Sharp, Brian. 1992). These species are associated with old-growth, riparian, rocky cliffs, or grass habitats. Snags in the area may be providing important habitat for Vaux's swifts, Williamson's sapsuckers, and American kestrels. Old growth stands occupy portions of this landscape, which may be supporting Cooper's hawks, olive-sided flycatchers, western wood-pewee, and mountain bluebirds. Riparian habitat associated with streams in the area may be providing habitat for riparian-associated species such as Williamson's flycatchers, tree swallows, and red-eyed vireos.

Environmental Consequences

Effects of Alternative 1 – No Action

There would be no effect or impact on MIS or TES wildlife or other wildlife species of concern with this alternative. With no boat launch improvements implemented, there would be no loss of existing habitat and no noise disturbance would occur. Annual ramp maintenance activities would continue the existing short-term noise disturbance from equipment.

Effects of Alternative 2 and 3

Implementation of either Alternative 2 or 3 would have no effect on the northern spotted owl. The project area is within three historic 1.2 mile radius northern spotted owl home ranges. The closest known activity center is over 0.5 miles away. Individual tree removal would result in a minimal change to low quality dispersal habitat with an immeasurable effect. The project is adjacent to highway 126 and the McKenzie

River were ambient noise levels are continually high and where the large open corridors are providing poor habitat do to exposure from aerial predators such as goshawks and great horned owls.

Annual bald eagle surveys have failed to document any bald eagle nests or roosts in the project area. The closest bald eagle nest is over 2 miles away. Limited bald eagle foraging use occurs on the river. The limited scale of this project would not affect the ability of bald eagles to continue foraging within the vast river corridor.

Project activities would occur in the riparian areas adjacent to the McKenzie River that may provide dispersal habitat for harlequin ducks. Harlequins are very mobile and adaptable to human disturbances on the river (ie rafters and boaters). The felling and leaving on site of individual trees for safety and parking in riparian areas would benefit this species by supplementing down woody material in their habitat. This project is not expected to have a measurable impact on harlequin ducks.

Cumulative Effects

Since neither the proposed actions, nor Alternative 3 would not result in any additional direct effects on wildlife MIS, TES, migratory land birds, or Survey and Manage species, there are no additional cumulative effects to the above species or their habitat. There no reasonably foreseeable future actions within the analysis area that could result in additional cumulative effects.

Botanical

Affected Environment

Sensitive Plants

The Forest Service manual directs us to ensure the viability of sensitive botanical species as well as preclude trends toward endangerment that would result in the need for Federal listing (Forest Service, 1991). There are no listed Threatened or Endangered plant species on the Willamette National Forest. Other rare plants, often not associated with older forests, are compiled on a Regional Forester's Sensitive Species List (USDA Forest Service. 2006). These species and their habitats are often rare and limited in distribution. A prefield review was conducted in April 2004 to determine which sensitive species have historically been documented in the Boat Launch Reconstruction project area. There are no documented sites of sensitive plants in the project area.

Intuitive-controlled field surveys in April 2004 followed up the prefield review to determine presence of sensitive plant species within project area, as well as suitable habitat potentially affected by the proposed project. No sensitive plants were observed during these surveys.

Survey and Manage Botanical Species

As stated above in the Wildlife section regarding Survey and Manage wildlife species, the Forest Service and Bureau of Land Management units are required to survey for 2001 ROD (amended March 2004) Category A and C species. Intuitive-controlled field surveys in 2000 and 2001 followed up the prefield review to determine presence of sensitive plant species within those special habitat areas, as well as other potential habitats. No sensitive plants were observed during these surveys.

Survey and Manage botanical species are species that are genuinely rare or, because of lack of information about them, the agencies did not know whether they would adequately be protected by other elements of the Northwest Forest Plan. The list of species that have potential habitat within the planning area and Survey and Manage species located in the planning area can be found in the Botanical Resource Report located in Appendix D.

In 2004, the Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines was released (USDA Forest Service and USDI Bureau of Land Management. 2004a). As a result, some of the species that were formerly Survey and Manage are now managed under the interagency Special Status Species Program (SSSP) as sensitive species. A pre-field review of the project area was conducted to determine the presence of potential habitat for former Survey and Manage species. Surveys were conducted in 2000, 2001 and 2006 in these potential habitats. Results from the pre-field review and surveys are above in Table 41, and in Appendix D.

Environmental Consequences

Effects of Alternative 1 – No Action

Direct and Indirect Effects

The no-action alternative would have no direct or indirect impact on sensitive plants or Survey and Manage species that are managed under the Forest Service Sensitive Species Program. No potential habitat would be degraded or removed for these species under this alternative.

Effects of Alternative 2 and 3

Direct and Indirect Effects

There is potential habitat present in the project area for six species currently listed on the Willamette National Forest Sensitive Species List, 2006 (three are Survey and Manage lichens) listed in Appendix D. Surveys of the project area have not documented any sensitive plant species or Survey and Manage species. However, some of the unoccupied potential habitat that is present in the project area would be removed under both of these alternatives.

More riparian habitat would be removed with Alternative 2 as compared to Alternative 3. However, the absence of known populations in the project area would result in no direct and indirect effects to

sensitive and Survey and Manage plants; therefore producing no measurable impacts with either action alternative.

Cumulative Effects

The analysis area for cumulative effects is the existing boat launches, loop road, and parking areas, plus the proposed development areas for Frissell, Bruckart, and Paradise boat launches. These areas were chosen because activities outside the analysis area would have no affect on sensitive species, or Survey and Manage species with suitable habitat located within the project analysis area.

As discussed above, implementation of the proposed action or any alternatives would not have direct or indirect adverse effects on sensitive plants or Survey and Manage species species. Based on the analysis of this project there would be no incremental change to sensitive species or Survey and Manage species.

Noxious Weeds

Noxious weeds on the McKenzie River Ranger District are predominately located along roads, power line corridors, and at recreation sites. They are primarily introduced or spread by vehicle traffic, road maintenance, recreational user, and ground-disturbing activities, such as road construction.

Vehicular traffic and road maintenance oftentimes create enough of a foothold for weed establishment, while providing access (via motorized vehicles) to other un-colonized areas. Most weed species become established as a result of a soil disturbance activity. Once they are established, they are able to persist and reproduce with little competition from native vegetation.

There are numerous weed species known to occur adjacent to the boat launches and project area. Spotted knapweed (Centaurea maculosa), St. John's wort (Hypericum perforatum) and false brome (Brachypodium sylvaticum) can be found along stretches of Road 19 and Highway 126. Weeds along Highway 126 receive chemical treatments annually by the Oregon Department of Agriculture.

None of the aforementioned weeds are present at the existing launches or in the proposed development areas. Spotted knapweed is present at the current Frissell Boat Launch and Scotch broom (Cytisus scoparius) is abundant at the Bruckart Boat Launch. Design measures, mitigation measures, and Best Management Practices would be implemented to minimize their spread.

Direct, Indirect, and Cumulative Effects

The analysis area for cumulative effects is the existing boat launches, loop road, and parking areas, adjacent roads, plus the proposed development areas for Frissell and Bruckart. These areas were selected for the known distribution of noxious weeds and because it contains likely travel routes for the proposed project.

Even without past or present management (i.e. vehicular traffic from recreational outfitting) in the proposed project areas, noxious weeds would still be present from natural and biological vectors.

Implementing Alternative 2, with construction of 0.1 mile of paved loop road at Frissell Boat Launch and 0.1 mile of paved loop road at Bruckart Boat Launch, offers the greatest opportunity of noxious weed spread. There would also be a short-term increase in potential for noxious weed spread because it removes more riparian vegetation than the other Alternatives. However, Alternative 2 provides less disturbed ground over time at Paradise Boat Launch because it proposes to pave the existing parking areas where Scotch broom is found. Alternative 2 also proposes to decommission 861 feet of existing loop road that connects Bruckart landing to Forest Road 19. Decommissioning this loop road would reduce the spread of Scotch broom by limiting seed contact with human vectors. Native grass seed would be applied to the scarified surface to prevent soil erosion and would be monitored for 2 years.

The cumulative effect of the proposed action would be an overall decrease in noxious weeds within the project area, considering the new construction of paved loop roads and parking at Frissell and Bruckart, the paving of parking and staging at Paradise, and decommissioning the road currently connecting Bruckart Boat Launch with Forest road 19.

There are no other reasonably foreseeable future actions in the vicinity of the boat launches that would contribute to the spread of noxious weeds within the project areas.

Wild and Scenic River and State Scenic Waterway _____

The Section 7 analysis for the McKenzie River Wild and Scenic Waterway, which is included as Appendix E, has determined that:

> The McKenzie River Boat Launches Project is consistent with Section 7 of the Wild and Scenic Rivers Act, and will have a direct effect on the river, but not an adverse effect on the values for which the river was authorized by Congress. The project is also consistent with the current Forest Land and Resource Management for the Willamette N.F. and the Record of Decision for Amendments of Land Management Planning Documents within the Range of the Northern Spotted Owl. The project is supported by the Upper McKenzie River Management Plan (1992). It is recognized that there will be short-term effects but that they are at an acceptable level. Free-flowing conditions will be maintained, and Outstandingly Remarkable Values will be maintained.

Concurrence was received from the Oregon Parks and Recreation Department on February 16, 2007.

Compliance with Other Laws, Regulations and Policies

This section describes how the action alternatives comply with applicable State and Federal laws, regulations and policies.

Federal Laws:

The Preservation of Antiquities Act, June 1906 and the National Historic Preservation Act, October 1966 – Consultation State Historic Preservation Office is completed under the Programmatic Agreement among the United States Department of Agriculture, Forest Service, Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Officer regarding Cultural Resource Management on National Forests in the State of Oregon, as amended in June 2004. Field surveys where ground-disturbing activities would occur in the project area have been completed. The surveys did not identify any sites. Should sites be found during ground disturbing activities, the District Archaeologist would be immediately notified. This project meets the criteria listed in Appendix C of the above-mentioned programmatic agreement, thus it is excluded from case by case review. Because heritage resources would not be affected by proposed activities under any action alternative, there would be no effect to any historic property listed in or eligible to the National Register of Historic Places.

The Endangered Species Act (ESA), December 1973 – The ESA establishes a policy that all federal agencies would seek to conserve endangered and threatened species of fish, wildlife and plants. Biological Evaluations for plants and wildlife have been prepared, which describes possible effects of the proposed action on sensitive, and other species of concern that may be present in the project area. A Biological Assessment was prepared for both the northern spotted owl, and for the threatened bull trout and spring Chinook salmon. Formal Consultation was required for bull trout and spring Chinook salmon. See "Consultation and Coordination – Coordination with Other Governments and Agencies."

The Clean Water Act, 1987 – This act establishes a non-degradation policy for all federally proposed projects. Compliance with the Clean Water Act would be accomplished through planning, application and monitoring of Best Management Practices (BMPs) where needed.

Magnuson-Stevens Fishery Conservation and Management Act, 1976 (MSA) – This project is in the middle of the McKenzie River sub-basin. The McKenzie River channel is listed as Essential Fish Habitat (EFH) for spring chinook salmon. Consultation with NOAA Fisheries under the MSA has been conducted along with ESA consultation.

Inventoried Roadless Areas and Wilderness – There are no actions proposed within Inventoried Roadless Areas (IRAs) or Wilderness in the project.

Executive Order 13186: Neotropical Migratory Birds – There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette have been identified as species of concern (Sharp 1992). A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001 Executive Order.

There are no effects on populations of migratory landbirds typical of the western Cascades (See Appendix B).

Executive Orders 11988 and 11990: Floodplains and Wetlands – Executive Order 11988 requires government agencies to take actions that reduce the risk of loss due to floods, to minimize the impact of floods on human health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. The proposed action would occur within 100-year floodplains.

Executive Order 11990 requires government agencies to take actions that minimize the destruction, loss, or degradation of wetlands.

Executive Order 12898: Environmental Justice – Executive Order 12898 requires that federal agencies adopt strategies to address environmental justice concerns within the context of agency operations.

The National Environmental Policy Act (NEPA), 1969 – NEPA establishes the format and content requirements of environmental analysis and documentation. Preparation of this EA was done in full compliance with these requirements.

The National Forest Management Act (NFMA), 1976 – The proposed action is consistent with the NFMA. (See Chapter 1, Forest Plan)

Forest Plan Consistency – The Willamette National Forest produced a Forest Plan in accordance with the National Forest Management Act of 1990, as amended. The Willamette Forest Plan, as amended, provides guidelines for management of the developed sites and providing river-oriented recreation. The Forest Plan also provides guidelines for management of Forest system roads on National Forest System lands. This action is in compliance with all natural resource management direction and established management standards and guidelines (see Chapter 1).

Other Jurisdictions – There are no other jurisdictions within any of the three boat launch project areas.

Energy Requirements and Conservation Potential – Some form of energy would be necessary the construction and installation of the boat ramps, loop roads, staging areas, and parking areas, which requires the use of mechanized equipment.

Prime Farmland, Rangeland, and Forestland – The proposal does not occur within or involve prime farmland or rangeland.

Unavoidable Adverse Effects – Certain activities associated with this action would take place directly in the McKenzie River (i.e. the placement of a pre-cast concrete ramp). Due to the need to conduct in-water work there are certain unavoidable adverse effects that could impact listed fish species (spring Chinook salmon and bull trout). This required the Forest Service to conduct formal consultation under the Endangered Species Act with the NMFS and USFWS. As part of the consultation process NMFS and USFWS provide, in a Biological Opinion, mandatory "terms and conditions" that the Forest Service must implement to minimize the impact on listed fish. Also see "Consultation and Coordination – Coordination with Other Governments and Agencies." (see Appendix A.)

Irreversible and Irretrievable Effects – "Irreversible" commitment of resources refers to a loss of future options with nonrenewable resources. An "Irretrievable" commitment of resources refers to loss of opportunity due to a particular choice of resource uses. There would an irreversible commitment of resources with the use of mineral materials to provide rock, gravel and asphalt paving in the construction of the new loop road at both Frissell and Bruckart boat launches. There would be an irretrievable commitment of resources in the minor amount of timber value in the trees cut for the clearing during construction of the loop roads. These trees are proposed to be used for in-stream fish habitat structures (see Chapter 2).

Monitoring Plan

Noxious Weeds

District personnel will complete noxious weed surveys after implementation, as a mitigation measure to determine if pressure washing off-road equipment before boat launch installation was effective. Noxious weed treatments would occur if necessary.

TES and MIS Fish

Water quality conditions will be monitored during boat launch construction to determine if there are any potential effects to TES/MIS fish. Vegetation (grass and trees) at rehabilitation sites and areas of new construction will be monitored at for 2 years to ensure planting success. If monitoring finds the need for additional planting, it would take place during the appropriate season.

CONSULTATION AND COORDINATION

Coordination with Other Governments and Agencies ___

Consultation with the State Historic Preservation Office (SHPO) for "No Effect" projects is facilitated by the June 2004 Programmatic Agreement among the Forest Service, the Advisory Council on Historic Preservation, and SHPO. Under the terms of that Agreement, concurrence authority for findings of No Effect has been delegated to the Forest Specialist. A concurrence of "No Historic Properties Effected" finding was received from Forest Archaeologist Cara Kelly (the designated Forest Specialist for the Willamette National Forest) on November 2, 2006. The concurrence form, documenting compliance with the National Historic Preservation Act, can be found in Appendix C.

Because of the lack of or minor effects of this project on habitat for any listed Threatened, Endangered, or Sensitive wildlife species, no formal or informal consultation was required with the USDI Fish and Wildlife Service on the northern spotted owl.

Due to the potential for "take" to bull trout and spring Chinook salmon (as defined by the Endangered Species Act), formal consultation was required with USDC National Marine Fisheries Service (NMFS) (for Upper Willamette River spring Chinook salmon) and with USDI Fish and Wildlife Service (USFWS) (for Columbia River Basin bull trout). A Biological Assessment was prepared for fish and is included as Appendix A. A Biological Evaluation was prepared for botanical and wildlife species and is included as Appendix B. A Biological Opinion (BO) was received from the USFWS on February 16, 2007 that provided mandatory "terms and conditions" that the Forest Service must implement in order to minimize "take" on bull trout. A BO from NMFS that addresses spring Chinook salmon is pending. A BO must be received from NMFS before the Responsible Official can sign a decision document for this project. A copy of the BO that addresses bull trout, provided by the USFWS, is available in the project analysis file.

The Oregon Parks and Recreation Department reviewed the Wild and Scenic River Section 7 analysis and provided concurrence of its findings on February 16, 2007. In their response they supported the actions at Frissell and Paradise Boat Launches.

Project Mailing List:

Scoping letters were sent to interested parties including the Tribal Governments on February, 10, 2003, and May 29, 2003. A field trip was held for the public on Saturday, September 20, 2003, to review proposals and visit the launch locations. Comments were received as a result of the scoping letter and field trip. Responses to the scoping comments can be found in Appendix G.

Federal, State, and Local Agencies:

USDI Fish and Wildlife Service
USDI Bureau of Land Management – Eugene District
Oregon Department of Fish and Wildlife
Oregon Department of Parks and Recreation
Oregon State Marine Board
Oregon Department of Transportation
Eugene Water and Electric Board
Commission on Indian Services
Linn County Commissioners
Lane County Parks

Tribal Organizations

Confederated Tribes of the Grand Ronde
Confederated Tribes of the Siletz Indians
Confederated Tribes of the Warm Springs
The Klamath Tribe

Individuals and Organizations:

Blue River CDC
Forest Conservation Council
Santiam Fish and Game
Obsidians
Many Rivers Group, Sierra Club
Rocky Mountain Elk Foundation – Oregon Field Director
The Register Guard
Jim Baker – McKenzie Guardians
Jim Berl – Oregon Guides and Packers
Roger Borine – Oregon Hunters Association
Ralph and Ellen Core
McKenzie Watershed Council
Ken and Louise Engelman - River Reflections
Michael Greenbaum
Doug Heiken – Oregon Natural Resources Council
James Johnston – Cascadia Wildlands Project
Mike Kerrick
Craig Patterson
Greg Pitts – Oregon Council – Federation of Flyfishers
Andy Stahl – Forest Service Employees for Environmental Ethics
Dave Stone – Conservation Leader, Lane County Audubon Society

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APPENDICES

Appendix A – Fisheries Biological Assessment/Evaluation and Magnuson-Stevens Act Assessment

Appendix B – Wildlife Biological Evaluation

Appendix C – SHPO Concurrence Documentation

Appendix D – Botany Biological Evaluation

Appendix E – Wild and Scenic Rivers Act Section 7 Analysis

Appendix F – Project Maps and Drawings

Appendix G – Scoping Comments and Agency Responses